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Some Patterns of Medical Care in Canada¹

PART I

Specialization and Integration Some Medical Economics

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BECAUSE of the implications of the findings of the Canadian Sickness Survey in many fields of public health, it has become practice to submit reports on the results of the survey to the Canadian Public Health Association at its annual meetings. This has been done since the early stages of the sample design; the field work and its problems were discussed, and some of the basic results regarding sickness, utilization of health services, and family expenditures for health care were presented. Since then the work has centred around those aspects of the survey which are most directly related to the study of health insurance problems, namely the variations in the health care received by different groups of the population, a topic closely related to the subject matter of the Canadian Medical Care Conference.

Canadian Sickness Survey Bulletin No. 8 was the first one to deal with health services. Bulletin No. 9¹ deals with the volume of health care for selected income groups. It is not intended to repeat in this paper the contents of the Bulletin but to emphasize and perhaps interpret some of the results.

Before looking at any data on medical care—medical care in the widest sense including all the various health services—it may be well to be aware of the many areas where no, or at best, inadequate data are available. The Sickness Survey provides only a benchmark for what happened in a certain year. We have no means of ascertaining changes in the adequacy of supply of physicians,

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nurses, dentists, hospital beds, and so forth. To look merely at the population-per-physician ratio, for instance, is applying horse and buggy statistics in an age of automation. We know that for Canada as a whole this ratio was almost identical in 1911 and 1954. Does this mean that the supply of physicians is as adequate or as inadequate today as it was in 1911? It is nothing of the sort. We do not know. On the one hand, we have a higher proportion of older people today with more chronic illness, and more illnesses can be diagnosed and subjected to treatment. All of this will create a greater demand on physicians' services. On the other hand, today's doctor with his car, on better roads throughout the year, can see more patients than his colleague could on horseback, or in a buggy or cutter. Modern diagnostic facilities, drugs, and other improved treatment methods facilitate and speed treatment. To measure the efficiency of health services merely in terms of numbers of doctors or beds in relation to the population would be like measuring, in economics, our gross national product in terms of the number of people in the labour force. And yet, while in the last twenty years our labour force has grown by about 25%, the national product has increased by almost 180% as measured in constant dollars.

To measure the productivity of health care resources, both personal and material, is a task still more complex because of the twofold changes: increasing demand, even in a constant population, and increasing efficiency due to technological advances. Our present statistics do not permit us to evaluate either aspect. But we can say that the ageing of the population alone over the last fifty years accounts for an increase in the population-physician ratio by about 6% if we assume that today's age-specific sickness pattern also prevailed fifty years ago. To this we would have to add the increasing demand for health services due to the partial removal of financial and geographic barriers and also to increasing susceptibility of various conditions to diagnosis and treatment. On the opposite side of the ledger we would have the increased efficiency of our health resources due to technological advances which, while not approaching the scope of electronic automation in industry, affect the pattern of health services very considerably. It is no longer adequate to evaluate merely by the number of beds, hospitals which have become vast repositories of complex technical and scientific equipment. That physicians make more use today of these hospitals for diagnostic and treatment purposes, is part of the trend. The physician's office itself is undergoing great changes, partly in order to adjust it to the demands of our modern age.

Group practice, already highly developed south of the international border, is making progress. It is organized sometimes on a "horizontal" basis, such as a group of general practitioners housed in one building where they can share space and administrative services. More significant is the group practice with a "vertical" combination of a variety of services under one roof, particularly suited for larger centers with a sufficient demand for specialist services.

We are witnessing other new patterns emerging in the scheme of health services. We are getting away from the strict compartmentalization of the various kinds of health professions and health services, and our attitude towards specialization seems to be undergoing changes. Now we sense the dangers of over-specialization. We notice efforts to overcome the disadvantages

of over-specialization and compartmentalization. This does not mean an end of specialization: with advancing technology, the field that can be mastered by the individual will probably continue to be narrowed. At the same time, however, greater liaison will have to be established between the various special disciplines if one is to benefit from the advances in others. In the health field we have several examples of a lowering of departmental fences. We find specialists associating in group practice with general practitioners. General practice itself is again recognized as an essential factor in a world of specialists. Increasing attention to the care of patients in their own homes requires closer liaison among the health professions. Extension of hospital services into the home is possible only with the fullest co-operation of the doctor, hospital, and the visiting nurse. Besides bringing the health professions and institutions closer together, modern health services concerned with the whole patient are coming more and more in contact with other community services. The medical social worker has become the essential link between these various services. Housekeeping services are beginning to be considered a legitimate supplement to the medical care.

Here then is one trend in the pattern of health services. Physicians continue to aim at further specialization, and nurses strive to narrow down their field of activity leaving some of it to nursing assistants and practical nurses. We are witnessing increasing specialization and yet, on the other hand, there are strong forces at work to integrate and coordinate these highly specialized services; coordinate them not only with each other but also with other community resources hitherto considered as lying outside the health field.

In order to detect and interpret patterns of medical care it is no longer adequate, therefore, to look only at the number of doctor calls or the number of hospital days. Fewer doctor calls may be compensated by easier access—geographically or financially—to hospital accommodation. The length of hospital stay, in turn, will be affected by the availability of visiting nursing care and other services at the home. The fact that almost one-third of visiting nursing cases are taken on after the patient's return from hospital illustrates this inter-relationship. For a number of conditions, such as tuberculosis and neoplasms, the proportion of post-hospital nursing cases is much higher; and of complications arising out of pregnancy and childbirth coming under home nursing care, over four-fifths are taken over from the hospital.²

The Sickness Survey has given us for the first time the type of information that makes it possible not only to see the individual person as a whole and in his environment, but also to observe the aggregate of health services he receives. Many more tabulations will have to be done before we will have the complete picture but some interesting features are emerging already.

The economic position of health care

Before looking at particular types of health services, it may be well to glance at their place in the whole scheme of our national life, which is the aggregate of what is happening to us as individuals. A convenient measure of our various activities that can be expressed in terms of money are the national accounts. Without attempting to go here into any details of medical economics, it is

interesting to note from the national accounts that what we spend on health care amounts to somewhere around 3% of our gross national product.³

Table 1 shows the behaviour of personal expenditure for certain medical care items in relation to total personal expenditure as well as to the gross national product. The table covers the depression, war, and post-war periods. Despite considerable fluctuations in the total personal expenditure, the percentage spent on medical care remained fairly stationary, between 3 and 4%. When,

TABLE 1
Personal expenditure for certain medical care items⁽¹⁾
related to total personal expenditure and gross national product
(in millions of dollars)

Year	Personal expenditure for medical care	Total personal expenditure	Gross national product	Per cent of total personal expenditure	Per cent of gross national product
	\$	\$	\$		
1930	154	4,204	5,546	3.7	2.8
1931	143	3,646	4,560	3.9	3.1
1932	113	3,108	3,767	3.6	3.0
1933	101	2,887	3,552	3.5	2.8
1934	104	3,077	4,034	3.4	2.6
1935	121	3,243	4,345	3.7	2.8
1936	130	3,457	4,701	3.8	2.8
1937	137	3,777	5,355	3.6	2.6
1938	146	3,815	5,233	3.8	2.8
1939	146	3,904	5,707	3.7	2.6
1940	162	4,399	6,872	3.7	2.4
1941	165	5,053	8,517	3.3	1.9
1942	169	5,514	10,539	3.1	1.6
1943	177	5,727	11,183	3.1	1.6
1944	190	6,187	11,954	3.1	1.6
1945	215	6,811	11,850	3.2	1.8
1946	251	7,977	12,026	3.1	2.1
1947	297	9,173	13,768	3.2	2.2
1948	335	10,112	15,613	3.3	2.1
1949	378	10,963	16,462	3.4	2.3
1950	428	11,862	18,029	3.6	2.4

(1) Including medical, dental, hospital care; private duty nursing; accident and sickness insurance.

SOURCE: National Accounts.

during the depression, personal income declined, so did medical care expenditures. As incomes went up during and after the war, so did medical care expenditures, always in about the same proportion. This indicates the degree of elasticity of medical care expenditures. A survey of city family expenditures⁴ confirms this and it is interesting to note here the different behaviour of food expenditures. These account for a substantially higher percentage of the low than of the high expenditures (see Table 2). In other words, expenditure for food is less elastic than that for medical care.

TABLE 2
City family expenditure
Percentage of food and medical care expenditure of total expenditure,
by expenditure groups.

Expenditure group	Food	Medical care	Total expenditure
Under \$2,500	35.4	4.4	100.0
\$2,500 - 2,999	33.1	4.1	100.0
\$3,000 - 3,499	33.2	4.2	100.0
\$3,500 - 3,999	31.0	4.1	100.0
\$4,000 - 4,499	27.7	5.0	100.0
\$4,500 - 4,999	27.0	4.8	100.0
\$5,000 - 5,499	25.5	4.4	100.0
\$5,500 - 5,999	23.6	4.2	100.0
\$6,000 and over	21.7	3.9	100.0

SOURCE: City Family Expenditure 1953. Reference Paper No. 64, D.B.S.

Within the expenditures for health care, the different items vary in their elasticity, that is the importance we assign to them within the limits of our budget. Sickness Survey Bulletin No. 2⁵ gave some information on that point. The percentage of expenditures for certain items of health care out of the total health care expenditures varied little between income groups for most items. Only for prepayment plan premiums and dental services was there a definite increase in the percentages from the lower to the higher income groups, a trend particularly marked for dental services; the percentage spent on drugs decreased with increased income. While this is true of the percentages, the absolute per family expenditures generally increase with income.

These are certain indications of the relative value given to health services by the budgeting individual. The volume of actual services received, however, will also be affected by the varying degree of care provided through public funds which will have a certain levelling effect between income groups.

Another interesting pattern in the economic aspects of medical care is the steadily growing proportion of the costs paid through insurance and prepayment of some kind or another.

Medical care in relation to income

Sickness Survey Bulletin No. 9 gives a great deal of detail regarding the various types of health care received by persons in different income groups. Table 3 summarizes the basic facts. Generally speaking, the utilization of health services increases with income, as would be expected. Notable exceptions are the rate of hospital days, where the low income group by far exceeds all others, and the rate of home nursing services among the low income group, but the rate of these services is very small to begin with.

The relatively high rate of hospitalization among people in the lower income groups is a well known fact which has been brought out previously by other surveys. The long average stay of indigents found in the Ontario Hospital Morbidity Study⁶ is one recent example, the California Health Survey⁷ is another.

TABLE 3

Estimated average number of units of various classes of health care
per 1,000 persons of each income group

Units of health care	Total	Actual estimates			
		Low income	Medium income	High income Lower	Upper
Physicians' services:					
Doctors' office calls	1,131	1,023	1,151	1,159	1,232
Doctors' home calls	512	569	442	528	692
Doctors' office and home calls	1,643	1,592	1,593	1,687	1,923
Clinic visits	143	129	152	150	116
Doctors' calls and clinic visits	1,786	1,720	1,744	1,836	2,039
Days of in-patient hospital care	1,728	2,692	1,628	1,136	1,332
Home nursing services:					
Visits of graduate nursing care	73	156	48	59*	
Days of non-graduate nursing care	77	161*	77*	22*	
Operations	40	34	38	44	52
Dental visits	323	143	305	435	535
Examinations for glasses	40	34	42	41	
Miscellaneous treatments	135	109*	128	162	

* Estimate below standard of accuracy.

SOURCE: Canadian Sickness Survey, Bulletin No. 9.

We have now attempted in the Sickness Survey to find out some of the factors accounting for these long hospital stays of persons with low incomes. Part of it is due to the difference in the age composition of the various income groups. The low income group contains a much higher proportion of older people than do the other income groups. This can probably be explained partly by the proportion of destitute people in that age group, but we must also remember that people with higher incomes in their working years will have their incomes sharply reduced when reaching retirement age. To eliminate the effect of age differences between the income groups, we have prepared age- and sex-adjusted estimates. The results are shown in Bulletin No. 9. To make comparisons easier, however, we have converted these figures into indices which form the contents of Table 4.

The figures in each cell of this table represent the percentage of each rate in relation to the average for all income groups combined; to take the first figure, for instance, it means that the rate of office calls per 1,000 persons in the low income group was 90.5% of the average for the total population. If the overall average was taken as a standard (100%), the low income group would be 9.5% below that standard in the rate of office calls.

To come back to hospital days, the rate in the low income group was 155.8% of the average, i.e., the persons in this income group had about 50% more hospital days than the overall average. The higher income groups were below the average, i.e., the 100% mark, with 94.2, 65.7, and 77.1% respectively from the medium to the highest income groups. When adjusted for age and sex,

TABLE 4

Indices of care received, by income groups
(Rates for all income groups together = 100%)

A = indices of care received per 1,000 persons

B = indices of care received per 100 days of disability

PART 1

ACTUAL ESTIMATES

		All incomes	Low income	Medium income.	High incomes	
					Lower	Upper
		%	%	%	%	%
Physicians' services:						
Doctors' office calls	A	100.0	90.5	101.8	102.5	108.9
	B	100.0	54.0	117.2	137.1	130.9
Doctors' home calls	A	100.0	111.1	86.3	103.1	135.2
	B	100.0	66.5	99.3	138.0	162.2
Doctors' office and home calls	A	100.0	96.9	97.0	102.7	117.0
	B	100.0	57.9	111.7	137.4	140.6
Clinic visits	A	100.0	90.2	106.3	104.9	81.1
	B	100.0	53.4	122.0	139.8	96.6
Doctors' calls and clinic visits	A	100.0	96.3	97.6	102.8	114.2
	B	100.0	57.6	112.5	137.7	137.3
Days of in-patient hospital care	A	100.0	155.8	94.2	65.7	77.1
	B	100.0	93.0	108.5	88.0	92.6
Home nursing services:						
Visits of graduate nursing care	A	100.0	213.7	65.8	80.8*	
	B	100.0	128.3	75.0	105.0*	
Days of non-graduate nursing care	A	100.0	209.7*	100.0*	28.6*	
	B	100.0	125.4*	115.9*	54.0*	
Operations	A	100.0	85.0	95.0	110.0	130.0
	B	100.0	51.5	109.1	148.5	154.5
Dental visits	A	100.0	44.3	94.4	134.7	165.6
Examinations for glasses	A	100.0	85.0	105.0	102.5	
Miscellaneous treatments	A	100.0	80.7*	94.8	120.0	
	B	100.0	48.6*	109.0	155.0	

* Estimate below standard of accuracy.

SOURCE: Canadian Sickness Survey, Bulletin No. 9.

the index of the rate for the low income group is reduced to 142.1%, the rate for the middle income groups is but little affected, but the rate for the highest income group increases from an index of 77.1% to 118.1%. The indices for age-sex adjusted rates are shown in Part 2 of Table 4.

Still more striking is the effect of the age composition in the case of nursing services. Here, the index in the low income group is reduced from 213.7% to 130.2% for graduate nursing care, when adjusted for age, and the index for

non-graduate nursing care from 209.7% to 128.4%. Particularly in the latter type of service we are operating with small frequencies in the sample and hence an increased margin of error, but the trend is unmistakable.

Changes in the same direction, due to the age distribution, can be observed for the indices for physicians' services.

Yet another procedure was adopted in order to bring differences between income groups into the proper perspective. Tabulations were carried out to determine the rates of sickness among the various income groups. The latest

TABLE 4 (concluded)

Indices of care received, by income groups
(Rates for all income groups together = 100%)

A = indices of care received per 1,000 persons

B = indices of care received per 100 days of disability

PART 2

AGE-SEX ADJUSTED ESTIMATES

		All incomes	Low income	Medium income	High income	
					Lower	Upper
		%	%	%	%	%
Physicians' services:						
Doctors' office calls	A	100.0	85.0	104.3	101.2	111.7
	B	100.0	54.9	104.2	120.6	126.1
Doctors' home calls	A	100.0	79.7	91.4	111.4	156.8
	B	100.0	50.0	94.0	129.1	155.3
Doctors' office and home calls	A	100.0	83.4	100.5	104.3	125.5
	B	100.0	53.5	101.3	123.0	134.6
Clinic visits	A	100.0	81.2	113.9	97.9	79.9
	B	100.0	48.5	107.5	131.3	94.8
Doctors' calls and clinic visits	A	100.0	83.2	101.5	103.8	121.7
	B	100.0	53.1	101.8	123.7	131.3
Days of in-patient hospital care						
	A	100.0	142.1	95.0	63.5	118.1
	B	100.0	97.9	107.8	85.5	99.0
Home nursing services:						
Visits of graduate nursing care	A	100.0	130.2	84.1	104.8*	
	B	100.0	81.2	87.5	127.1*	
Days of non-graduate nursing care	A	100.0	128.4*	129.7*	37.8*	
	B	100.0	89.1*	130.9*	49.1*	
Operations	A	100.0	87.2	94.9	115.4	135.9
	B	100.0	57.9	92.1	131.6	147.4
Dental visits	A	100.0	49.8	94.1	129.6	168.8
Examinations for glasses....	A	100.0	80.0	110.0	102.5	
Miscellaneous treatments ..	A	100.0	56.9*	109.5	113.1	
	B	100.0	30.4*	97.6	147.2	

* Estimate below standard of accuracy.

SOURCE: Canadian Sickness Survey, Bulletin No. 9.

Sickness Survey Bulletin shows the results both for "complaint periods" (i.e., severe as well as minor illness) and for disability periods, representing incapacity to carry on one's usual activity. The concept of both complaint and disability contains a certain subjective factor. This factor will be greater for minor complaints than for disabling illness. The latter, therefore, will form a more reliable basis for comparisons among different groups of people. Still, the concept of what constitutes a "disability", e.g., incapacity for work, will vary between income groups. It can perhaps be assumed that people in the low income group will be less disposed to letting illness keep them from work than people in more sheltered occupations in the higher income groups. Nevertheless, the tables revealed a much higher incidence of disability in the low income group as compared with the other groups. The rate of disability days per person in the low income group was about 20, compared with about 10 in the other income groups. Standardized for age and sex, the corresponding figures were about 18 and 11.

It was assumed then that the rate of disability days per person might form a basis, however crude, for determining in some measure the relative need for medical care in each income group. The resulting tabulations are shown in the Sickness Survey Bulletin. Transformed into indices they will again be found in Table 4 as the second line (marked "B") for each item of service. The lowering of the index of service in the low income group is dramatically portrayed in the differences between lines "A" and "B" for the low income group—and the corresponding rises for the other income groups. The index for doctors' calls, already below par when related to the population, drops from the nineties down to the fifties. The index for hospital days is reduced from about 50% above par to several per cent below par. This index for nursing care slides from over 200% down to some 120%.

Particularly striking was the difference between income groups in the rate of hospital days among males aged 15 to 44. The number of hospital days per 1,000 persons in this age-sex group is as follows for the different income groups:

Low income	Medium income	High income
3,505	959	792

It is the difference in this particular group that accounts for most of the excess in the rate of the low income group. We had some hunches regarding possible explanations for this difference, but in order to make sure that there was no error involved, special tabulations were done which revealed the following:

Males aged 25 to 44 in the low income group—by reason of occupation, general health standards, or otherwise—were particularly prone to types of disability requiring a relatively great amount of hospital care. About three-quarters of the days of hospital care reported by this group concerned either tuberculosis or accidents. The same conditions accounted for only half of the hospital days reported by the same age-sex group in the medium income group, and for less than one-tenth of those in the high income group. If both hospital days and disability days for tuberculosis and accidents are eliminated from the count, the average number of hospital days per 100 disability days

for males aged 25 to 44 shows a completely reversed pattern as among the income groups:

	Low income	Medium income	High income
Person-days of hospitalization per 100 disability days	24.47	14.01	12.39
Person-days of hospitalization per 100 disability days excluding tuberculosis and accidents	6.19	10.25	12.92

Because a small group was selected for this analysis, allowance must be made for a possible greater margin of error than has been selected as standard for Sickness Survey publications, but the pattern of the figures is obvious.

There are, of course, less tangible factors which will also tend to increase hospital utilization by the low income group. Among these factors are home environment unsuitable for convalescence, policies and practices regarding medical care for indigents, etc.

Dental care in relation to income

Attention is drawn to the pattern of dental care as among the income groups. The utilization of dental services as revealed by the Sickness Survey is very low indeed. For the country as a whole the estimates are that only 15% of the population saw a dentist during the year. It must be added, however, that school dental examinations or treatments are not included in the Survey figures. The corresponding figures for the low, medium, and high income groups are 8%, 14% and 20% respectively.

In terms of dental visits per 1,000 persons, the differences are still more pronounced. The index of utilization (see Table 4) is as follows for the four income groups, with the average for all income groups as 100%:

Low income	Medium income	High income	
		Lower	Upper
44.3%	94.4%	134.7%	165.6%

Adjustment for age does not alter the picture appreciably.

No information was collected in the Sickness Survey regarding the nature of dental visits and therefore no analysis can be made from the Survey regarding any differences in the type of dental treatment received by people in the different income groups. A clue may be provided, however, by Koos in his "Health of Regionville". He distinguishes between social classes and comes up with the following percentage distribution of types of dental treatment:

Type of treatment	Total	Class i	Class ii	Class iii
Prophylaxis	38.2	52.3	37.3	14.3
Emergency repair	46.1	45.5	49.4	26.2
Prosthesis	3.7	2.2	4.5	2.4
Extraction	12.0	—	8.8	57.1
Totals	100.0	100.0	100.0	100.0

Under extractions are counted only those which were due to the neglect of earlier conditions. There were no such cases in the highest class, Class 1, but they accounted for over half the treatments in the lowest class. Although

Koos' classes are based on a different concept from the income groups in the Sickness Survey, they can probably be assumed to correspond by and large. We can assume that what happened in Regionville will also be true of Canada. This means that the lower income group gets not only less dental care than the higher income groups (less than half as much as the medium income group, and about one-third as much as the high income group), but most of the dental service these people do get is really only emergency treatment of neglected conditions which comes too late to promote good dental health.

It is in regard to dental care that the low income group is furthest below par, i.e., the average for all income groups. The results from Regionville confirm the findings of the Sickness Survey, or vice versa, that the use of the dentist is related to economic characteristics to a greater degree than the use of any other type of health services, particularly physicians' services.

SUMMARY

The trend in our health services is towards greater specialization but also increasing integration of these highly specialized services.

Today's complex health services, integrated with each other and with other community services, require for their evaluation more complex statistics than we have been used to in the past. Health statistics, as health services, have to consider the whole person and his needs. Mere population-physician ratios or days of hospitalization in themselves are no longer adequate measurements for the assessment of medical care.

The amount of money spent on medical care is elastic and varies with the income: the higher the income, the more is spent for medical care. The percentage of medical care expenditure out of total expenditure remains fairly constant for varying incomes.

While the per capita amount of various types of health care received is small, it assumes larger proportions for those actually using these services.

With the exception of hospital and home nursing care, people in the low income group receive fewer services than those in the higher income groups. The high rate of hospitalization among the low income group is due partly to the higher proportion of older people, to the higher incidence of disabling illness, to the higher incidence of certain conditions (tuberculosis, accidents) in the lower income group, as well as to certain social factors.

The amount of dental care shows a particularly high correlation to income. Indications are that what little dental care people in the low income bracket do get, is largely of an emergency nature.

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The Antibody Response to Poliomyelitis Vaccine in School-Children at the Time of Initial Vaccination and One Year Later^{1,3}

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With a view to accumulating information on the efficacy of current Connaught poliomyelitis vaccine for the production of neutralizing antibody in children, this investigation was initiated in the spring of 1955. The study is made up of two main groups of subjects. The first part of the study involved about 160 grade 3 school-children from the East York-Leaside area; these were initially vaccinated in the spring of 1955 (S series). Another slightly smaller group of school-children (from grades 1 and 8) from the same geographic area comprised a second part; they were initially vaccinated in the spring of 1956 (Y series).

In the first group, the average age of the pupils was about 8½ years. The general plan was to take blood specimens for estimation of antibody level just before, and two weeks after, the initial course of Salk-type polio vaccine given parenterally. All vaccine was given in 1 ml. doses by the subcutaneous route. To compare the effect of three, with two, doses given at the time of initial vaccination, the children were divided into two groups—one group (S₃) receiving vaccine at 0, 1 and 4 weeks, the other group (S₂) receiving vaccine at 0 and 4 weeks' time. Approximately 12 months after the first dose of vaccine, a booster dose of 1 ml. of vaccine was given. Blood specimens were taken just before and about two weeks after the booster dose, making a total of four blood specimens from each child. Serum was separated from all blood specimens within 24 hours of their being taken and was stored at -20° C. until assayed for neutralizing antibody. This estimation was done by a modified metabolic inhibition test as described by Salk, Youngner and Ward (1), using monkey kidney cells. Tissue culture tubes were sealed with a layer of mineral oil instead of by closure with rubber stoppers. All four sera for each subject in the study were run simultaneously. Serum dilutions in nine two-fold steps from 1/4 to 1/1024 were set up. There was, of course, a small percentage of children lost to the study, mostly through change of residence.

¹Presented in part at the Laboratory Section meeting of the Canadian Public Health Association, December, 1956, at Ottawa.

²Research Member, Public Health Associate and Research Assistant, respectively, at the Connaught Medical Research Laboratories, University of Toronto.

³This investigation was aided in part by a Federal Public Health Research Grant through the Department of Health of the Province of Ontario.

Results

A general picture of the antibody levels for the three serological types on the four blood specimens is gained from Figure 1, in which all results regardless of

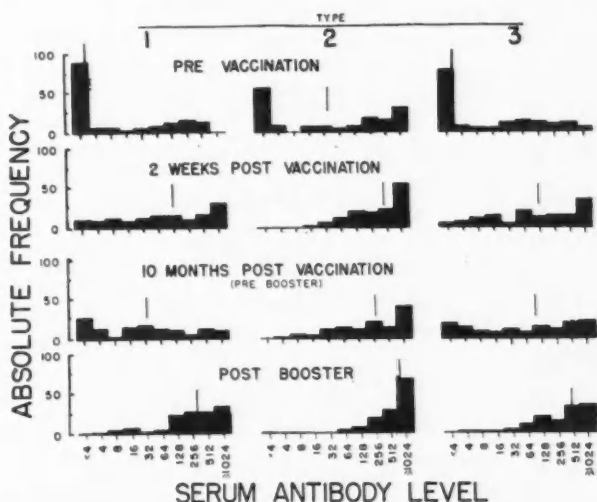


FIGURE 1.—Frequency distribution of poliomyelitis antibody levels, pre- and post-initial vaccination and pre- and post-booster. (S series)

dose schedule, which will be discussed later, are plotted as frequency diagrams. From top to bottom each of the four outlines gives data on one of the four blood specimens in chronological order and the three columns of diagrams represent the three serological types. In each diagram absolute frequency, i.e. number of cases, of antibody response is plotted against antibody level from < 4 to ≥ 1024 in two-fold steps. In this paper, the expression "antibody level" is used to indicate the reciprocal of endpoint dilution; it therefore denotes the concentration of antibody. Thus, for type 1, the pre-vaccination antibody levels show a marked preponderance at the < 4 level with the remainder scattered across the other levels measured. A similar situation exists for type 2, with a fair number of children showing antibodies at the maximum level measured, namely ≥ 1024 ; the silhouette for type 3 is almost identical with that for type 1 in this respect.

The effect of initial vaccination is given by the frequency distributions of the antibody levels for the second blood specimens as shown in the second row of diagrams. For types 1 and 3, the cluster of pre-vaccination results at the lowest level measured is now spread across the whole range of values. Type 2 antibodies were on the average higher in the pre-vaccination serum and correspondingly show a higher average level after initial vaccination. For purposes of comparison, to represent each frequency diagram by a single value, the mean was not chosen, for to calculate it requires that finite values

be assigned to each of the individual antibody levels. An appreciable proportion of the results, however, falls outside the range of levels actually measured, namely at the two extreme ends of the diagram—the values represented by the inequalities < 4 and > 1024 . Some of these levels are, from the practical viewpoint, indeterminate. Consequently, to obviate this difficulty, median values were chosen. The median level is shown as the short vertical line on each diagram. Clearly, for each type, initial vaccination was followed by a substantial increase in the median antibody level.

During the ten-month period between the taking of the second and the third blood specimens, i.e., corresponding to the interval between the initial vaccination and the booster dose, there was a slight decline of the median values (shift to the left) as indicated by the redistribution of the blocks in the diagrams to give the third row from the top. The median value for type 2 is again rather higher than for the other two types. Under these conditions, the average half-life of the antibody might be said to be *about* ten months—slightly less for type 1.

Following the single booster injection there is a further response in antibody level. The post-booster median antibody level is, for each type, significantly higher (at the 0.1% level) than the post-initial level when the chi squared test is applied. It is noteworthy that although after initial vaccination some subjects still had virtually no antibodies for types 1 and 3, after the booster dose *all* children had measurable antibodies.

That the proportion of children responding by an increase in antibody level at the time of initial vaccination appears to be independent of pre-existing antibody level is shown in Table I; in it the proportion responding positively

TABLE I—PROPORTION (%) OF CHILDREN RESPONDING TO INITIAL VACCINATION
(Entire 1955 Series; S_3 and S_2)

Pre-Vaccination Antibody Level	Type		
	1	2	3
for corresponding type			
≤ 4	71/80 = 89%	48/48 = 100%	68/71 = 96%
≥ 4	48/53 = 91%	44/60 = 73%	53/60 = 88%
triple negative			
(< 4 for all 3 types)	14/20 = 70%	20/20 = 100%	17/20 = 85%

is compared in subjects with no pre-vaccination antibody (at the lowest level measured) with that in subjects showing pre-vaccination antibodies. Results on all subjects (S_2 and S_3) were combined for this comparison. The figures have been slightly adjusted by eliminating certain factors which would otherwise introduce a bias. Figures for so-called "triple negatives", i.e., children with no pre-vaccination antibody at the lowest level measured, are given in the bottom line of Table I. There does not appear to be any very significant difference or, in other words, the proportion responding is, in this sense, independent of the level of pre-vaccination antibody. The proportion of children changing from no antibody to definite antibody following initial vaccination, sometimes referred to as the per cent conversion, is given in the first and last rows of figures for those whose pre-vaccination antibody level was < 4 for at least one type, and < 4 for all three types, respectively.

In order to compare the two dosage regimes used, Table II shows the ratio and per cent of conversions by type for three and for two doses of vaccine given

TABLE II—COMPARISON OF TWO DOSAGE REGIMES AT TIME OF INITIAL VACCINATION
(a) by Percent Conversion

No. of Injections	Total No. Children	Type		
		1	2	3
3	58 (S ₃)	29/32 = 91%	19/19 = 100%	26/26 = 100%
2	77 (S ₂)	42/48 = 88%	29/29 = 100%	42/45 = 93%

(b) by Post-Vaccination Antibody Level* (triple negatives only)

		Type		
		1	2	3
3	7 (S ₃)	2.86 ± 0.71	6.14 ± 0.96	4.57 ± 0.87
2	13 (S ₂)	2.38 ± 0.31	6.46 ± 0.26	3.77 ± 0.70

*log₂ geometric mean level ± S.E.

at the time of initial vaccination, that is at 0, 1 and 4 weeks (S₃) and at 0 and 4 weeks' time (S₂). The upper part of the table gives the per cent conversion for three and for two injections. For each type the differences are not significant. The geometric mean antibody levels for the two dosage regimes given in the lower part of Table II are also very similar. Apparently the third injection at the time of initial vaccination adds little, if anything.

Increased safety requirements for the manufacture of the vaccine, introduced during the past year and a half, have raised the question of whether the polio vaccine produced for use in the spring of 1956 was as potent as that produced for use in the spring of the previous year at which time it was subject to less stringent processing and safety testing. Accordingly, per cent conversions in a *second* series of children from the same geographic area who received their initial vaccination (two injections of current vaccine subcutaneously) in the spring of 1956 (Y series) are presented in Table III along with such

TABLE III—PERCENT CONVERSIONS — 1955 AND 1956 SERIES

Series	Total No. Children	Type		
		1	2	3
S ₃ & S ₂	58 + 77	71/80 = 89%	48/48 = 100%	68/71 = 96%
Y ₁	59	32/32 = 100%	30/30 = 100%	22/23 = 96%
Y ₂	70	29/30 = 97%	24/24 = 100%	27/27 = 100%

data obtained in children initially vaccinated in 1955 (S₃ and S₂ series combined). The 1956 series of school-children is composed of two groups: grades 1 (Y₁) and 8 (Y₂). It is seen that there is no evidence of decreased potency in the more recent vaccine. Bearing in mind that some authorities believe that any measurable antibody level is evidence of protection, both of these vaccines are of good potency.

Finally, the general effect of the two injections of vaccine in the Y₁ and Y₂ series (1956) is shown in the frequency diagrams in Figure 2. As in Figure 1, median antibody level is indicated by the short vertical line in the upper part of each diagram. The extent of the response to initial vaccination may be judged by the amount of the shift to the right of the median antibody level for each type, following vaccination.

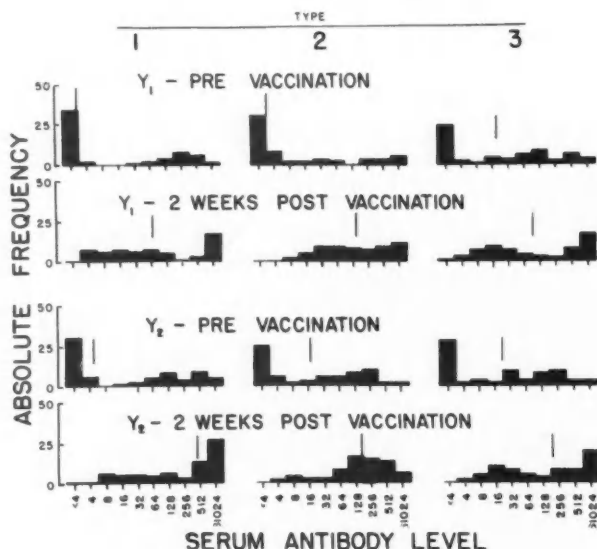


FIGURE 2.—Frequency distribution of poliomyelitis antibody levels, pre- and post-initial vaccination. (Y series)

Summary

- Poliomyelitis vaccine of the Salk-type used in the spring of 1955 in a group of school-children resulted in a marked increase in neutralizing antibody level in a high percentage of the subjects.
- The proportion of children responding appeared to be independent of original antibody level.
- These post-vaccination levels were well maintained, with some decreases, during the ten-month pre-booster period.
- The booster dose given one year later resulted in antibody levels significantly higher, but not vastly higher, than those found after initial vaccination. Following the booster injection no child was without a measurable antibody level for each of the three serological types.
- Three subcutaneous injections at the time of initial vaccination present no advantage over two injections.
- For practical purposes, vaccine produced for the 1956 season seems to be as potent as that produced a year earlier.

REFERENCE

1. Salk, Jonas E., Youngner, J. S. and Ward, Elsie N.: *Am. J. Hyg.*, 1954, 60: 214.

ACKNOWLEDGEMENT

It is a pleasure to acknowledge the excellent co-operation of Dr. William Mosley, Director of the East York-Leaside Health Unit, which made this study possible, and also the assistance rendered by members of the staff of the Connaught Medical Research Laboratories, School of Hygiene and Provincial Health Laboratories in connection with obtaining the blood specimens. The authors are especially grateful to Mr. D. B. W. Reid of these Laboratories for valuable statistical advice. The co-operation of the parents and school authorities concerned is much appreciated.

Mental Health in Industry

A PANEL DISCUSSION

This panel discussion was presented at the tenth annual Combined Convention of Ontario and Quebec Industrial Physicians held in Hamilton, Ontario in September 1956. The Convention is held on alternate years in each of the two provinces. This unique arrangement was originated in 1946 to promote close and friendly association among industrial physicians in that part of Canada where the vast majority of industry is situated. The meetings result in an exchange of knowledge, ideas and customs which is invaluable to the progress of Occupational Medicine in Canada.

The panel was under the direction of Dr. Aldwyn B. Stokes, Professor of Psychiatry, University of Toronto. The other participants were Dr. Richard G. Warminton, Medical Director, North American Cyanamid Limited, Niagara Falls, Ontario; Dr. Walter Bremner, Psychiatrist, Out-Patient Division, Toronto Psychiatric Hospital; Mr. W. Caron Jones, Industrial Psychologist, Ontario Hydro-Electric Commission; Dr. T. J. Mallinson, Social Psychologist, Department of Psychiatry, University of Toronto.

MODERATOR'S REMARKS

A. B. STOKES, C.B.E., D.M., M.R.C.P. (London), F.R.C.P.(C)

THE giving of a name to any functional system is apt to create the notion of "a thing" and to implicate thinking about this "thing" as if it were an objective unity: "War", "Emotion", "Health", are examples of this trend, to which might be added that of Industry. The dictionary definition of industry "any productive occupation, especially one in which considerable numbers of people are employed" would apply to farming as much as to an industrial plant producing bread or bicycles or beer. Indeed, the essential features of attracting or otherwise bringing about a concentration of people in a place technically geared to the manufacture, distribution and sale of a product are missed. Yet it is this movement of people from the general population to the confined locus and the constraining techniques of manufacturing that raise the mental health problem.

There can be no doubt that the problem exists and that it is of large dimensions. Russell Fraser found 10% of workers disabled to major absentee degree and 30% to minor absentee degree by reason of disturbances not primarily of organic physical kind. The question might immediately be posed as to whether these disturbances arose out of the industrial circumstances or out of other

personal difficulties in the community. The question, however, again betrays an artificiality in definition since each individual's life has a continuity of flow. He brings his personal problems from the community to the job; he takes his job problems back into his home life.

These problems are not of necessity recognisable to himself. A nagging wife might so engender antipathetic feeling as to be the cause of a blow-up with a critical foreman. But whereas the petulance of the wife might be supported by the use of denial mechanisms, the criticism of the foreman might be directly challenged in overt antagonism. Vice versa, a sense of work incompetence might be covered up on the job but would trigger very much a tempestuous scene at home in the circumstances of a derogation of male, head of the house, status. In short, the individual problem is one element, the climate in which it is triggered another. Always, in terms of the health ideal, both the individual and the climate of his work and home require scrutiny.

Unfortunately, unless the individual himself can exercise the freedom of a personal intrinsic responsibility he is likely to suffer the consequences of a divided external responsibility—the industrial organization limiting its responsibilities to working hours, the community services the remainder.

The industrial medical officer has to accept the limited responsibility as a condition of his work. He may rely hopefully on methods of selection, using physical and psychological methods of appraisal, to screen out obvious misfits. But once having admitted his man he has no guarantee that over the subsequent months or years, newly precipitated circumstances will allow stable response. In fact, methods of selection are more static than the fluid interplays within his organization.

With experience he will realize that these fluid interplays are at any rate partly understandable in terms of human identifications and relationships. The same supervisor to different workers may appear as a benign fatherly person, as a fussy old man, or as a threatening authority with a consequent dependency attitude, or an attitude of petulance, or an angry rebellion. The problem in industry as in the armed forces is to appoint and promote men skilled, usually intuitively, in maintaining a positive bond of relationships despite the varying significances they represent to different people.

Various organizational devices are employed to mark the calibre of the supervisor or head of a section but they are too frequently perhaps loaded in favour of technical accomplishment—an example of parallel kind is in the selection of teachers.

However that may be, the panel members will pick up a diversity of points important to a situation of human-technical co-operation. If in that co-operation feeling is engendered of hurtful, painful quality, unappeased over a period of time, then the homeostatic limits of personal adjustment will be exceeded with the outcome of an individual psychotic, neurotic, or psychosomatic illness.

Such an illness, on the whole, can be dealt with helpfully because it will itself be an indicator of cause. The arrangements necessary for this person to succeed will force attention to the general circumstances and the repatterning of a climate better for him. Whether or not time out is taken for the appraisals

and judgments necessary turns on the policy of management and the helping skills which it can mobilize within its organization. When deliberately undertaken as a responsibility, as with the disabled persons employment schemes or resettlement schemes, the evidence is that the degree of success can be very worthwhile. The success will be pertinent not only to industry but to the community at large.

A PHYSICIAN WITHIN INDUSTRY

R. G. WARMINTON, M.D.

When one gives consideration to the state of mental health in industry, it represents, in my opinion, one aspect of good general industrial health. The maintenance of health in industry is of the utmost importance for the purpose of providing employment for those required to aid in industrial production, and an important sector of this health maintenance is the continuation of good mental health.

Regardless of the amount of automation that can be developed, the need for human skill exists on an increasing technical and mechanical basis. To suggest what might be required in the future, one merely has to glance at the recent McGraw-Hill survey in order to forcibly realize the amount of industrial expansion that is contemplated in the United States alone, with a similar pattern anticipated for Canada on a more modest scale.

This year, thirty-nine billion dollars is expected to be spent on new plants and equipment, a 30% increase over last year. This tops the record thirty-five billion dollar figure which was generally forecast for the year 1956. There is no reversal of the trend, and businesses in America are expanding, building, remodeling, buying new production equipment at a rate never before known in economic history. Manufacturing companies plan to increase capacity 8% in 1956 and another 18% in the 1957-59 period, making the total manufacturing increase 51% since 1950, twice their capacity at the start of the Korean War. Also, new products lead industry's 1956-59 plans with 11% of the 1959 sales expected to be in products not made in 1955. In 1955, business spent five billion dollars on research and development facilities, a 29% gain since 1953 and by 1959, expenditures of this sort should be increased another 33% or a total of six billion, three hundred million dollars.

When one contemplates figures like these, it is not difficult to determine the need for maintaining the health of key personnel and indeed all employed people at as high a level as possible.

In the maintenance of mental health in industry, there are from the standpoint of industrial medical services, various measures that may be utilized. The observance of changing personality can frequently be recognized by an astute supervisor, who very soon becomes aware that something is amiss with

a member or members of his employee group. This may not always have to do with the working environment; it may concern problems related to home environment, but at any rate, whatever may be the cause, the observant supervisor can be the means of making the medical department aware of this change and may initiate consultation with the medical department for a disturbed employee. In large part also, changes may be observed by nurses who are in constant contact with employees and in whom changing personalities or evidence of stress or strain may first be recognized.

One of the primary problems with respect to disturbed employees is that of job placement. With changing physical abilities, there may be required various job placements in order to establish an employee on the job most suited to his requirements. When this becomes a matter of deteriorating physical abilities, one must be particularly careful in choosing the type of employment which is going to satisfy, but which may require the taking of a lower rated job in order to carry on. Therefore, one can realize that there is a large field in the industrial medical department for the provision of early care, advice, and the carrying out of job placement and adjustments as required to meet an individual employee's changing needs.

Many of the emotional disturbances which occur in an industrial worker, if discovered early while in the minor stages, may very easily be corrected by removal of the problems which cause tension, thus restoring the individual to good health before he presents a serious problem. There are others who seemingly arrive almost immediately at a serious stage in their mental disorder and thus require recognition, with the early initiation of treatment through their family physician, often in combination with the psychiatrist. With such disturbances, even of short duration, it is much more likely that an adequate early outcome can be brought about with satisfactory restoration to useful work with a minimum of time lost. Indeed, some cases may even continue to do moderate work while undertaking certain phases of their treatment. The industrial medical department has then, a great responsibility, first, for being informed through aware supervision, secondly through the observance and experience of the medical staff in recognizing such disturbances amongst the employee group, and thirdly, for the early initiation of sufficient guidance and commencement of treatment through the family doctor and the psychiatrist whenever this is required.

In this way, a really valuable service can be rendered by awareness on the part of the medical department of changes in employees, particularly when it may apply to the working environment. The co-operation of supervision is a most useful adjunct in order to make aware to the medical department changes in personality or other aspects of the mental health of an employee or employees. This along with consultation through the medical department staff can be the means of initiating treatment at an early stage with usually a satisfactory outcome with a minimum of time lost from the working environment. Such services can and should be made available through the industrial medical department as a means of providing a real service to the employee group which it serves.

A PSYCHIATRIST WITHIN INDUSTRY

W. V. BREMNER, M.D., D.P.M.

As a contributor to the panel, I should preface my remarks by stating that my impressions made with respect to psychiatry in industry stem from personal experience in the practice of private and public clinic psychiatry rather than from specific experience as an industrial psychiatrist. That is, while I have worked in close co-operation with various industrial medical officers in the management of employees suffering from psychiatric disorders, my experience has not included formal training within a company.

To cite one of the apparent advantages in being an industrial psychiatrist, I should place high on the list that of belonging to a group—the benefit to be derived from being an active member of an organization—the associated incentive and security which should ensue from the feeling of being needed and contributing to a progressive industry. I should anticipate that the industrial psychiatrist should be in a position to give his undivided attention and loyalty in his working hours to one organization—something that cannot be fully experienced by the general psychiatrist, who is frequently spreading his services rather thinly.

In a full-time capacity within industry the psychiatrist, contingent upon size of the organization, should reap the benefits of developing a more intimate knowledge of personnel from top executive through to newest employees, a general knowledge of the technical aspects of each department and how each department's services tie in with the over-all functioning of the company.

This implies that there would be some overlapping of duties of the industrial medical officer and psychiatrist and I presume more involved overlapping could arise where the company employed a psychologist or personnel workers as well. This, in turn, brings up the definition of terms and if we consider psychiatry's role as one of dealing with the recognition and treatment of mental disorders, we might for practical purposes, consider that psychiatry's job is that of managing the more florid psychiatric syndromes arising in employees. After all, the industrial medical officer and collateral staff carry out what might be termed a front-line psychiatry in keeping with the time and facilities at their disposal. Hence the necessity of employing a full-time psychiatrist within the company may not be such an all important factor, inasmuch as trained personnel are already available at that level readily conversant with the functioning of various departments and the persons involved therein. Then the industrial medical officer, in his screening of problem patients, may refer to an outside psychiatrist those patients whom he deems require additional psychiatric management.

But this appears to be an over-simplification; in any event, before World War II, and increasingly so since the war, certain progressive management and medical departments have thought in terms of promoting industrial mental health rather than in terms of detection and treatment of mental illness only.

And it appears that while the introduction of psychologist and personnel workers effected changes for the better in industry, at the same time new avenues requiring exploration in the realm of industrial mental health were opened. In some plants the medical officer and management have jointly sought the services of a full-time psychiatrist to contribute from his knowledge of human behaviour to the solution of problems within industry. In such a role the psychiatrist becomes one of a closely-knit team which pools its knowledge in an attempt to solve current problems. In its initial stages, such a team's efforts can only be considered experimental or a research project—certainly psychiatry's contribution in recommending remedial measures can only materialize when sources of potential underlying psychopathology are determined.

While there is the inevitable meeting-ground of clinical diagnostic therapeutic psychiatry and mental health, I submit for general discussion that if and when psychiatry is asked to participate in a full-time capacity in a particular industrial enterprise that both industry and psychiatry arrive at a mutually satisfactory determination of goals—hoping that clinical psychiatry will not be muddled with experimental, research or exploratory programs in which psychiatry may be considered one contributor to a team.

A PSYCHOLOGIST WITHIN INDUSTRY

W. C. JONES, M.A.

On this subject I should like to make comments of two kinds.

The first observation to be made is that it has been our experience that many of those who need help on mental health matters appear, on investigation, to be persons who are suffering from personal rather than occupational limitations. For people in this category, it might be said in a sense that the seeds of disaster had been sown broadcast; the fact that they have harvested travail in an industrial field is purely fortuitous, for similar crops have been ready for reaping in any quarter of their lives.

For people in this group, therefore, the setting recedes into the background in importance and attention is focused on the basic areas of disturbance where any therapy, to be effective, must be centred.

This, of course, is not to imply that for such people the quality of work performance remains unaffected. On the contrary, the evidence here emphasizes the fact that every one is an integrated unit and a disturbance in any one aspect of a person's life may well reverberate in all directions.

Thus, absenteeism may be a product of conflict or tension-producing situations quite unrelated to the job; and productivity or creativity may be hampered by self-engendered shackles—shackles formed in settings other than the occupational one and at some earlier point in time.

The second observation is that we have often experienced the uneasy feeling

that the person referred for treatment was in need of help not because he was abnormal, but because he was "normal"; that he was suffering because he was a "normal" person forced into an abnormal situation, and that his distress was a testament of health rather than sickness.

Instances of this kind are varied in nature. On occasion, it appears that it is not the employee in question but his supervisor who requires attention; and more than one employee has offered this acid observation. The supervisor who has been appointed to this rank because of his technical abilities rather than his capacity for understanding and dealing with people; the supervisor who has gained his rank by reason of endurance (i.e. seniority) rather than ability; the supervisor who has been promoted beyond his competence; all of these may perform their duties so ineffectively and may misuse their authority so tyrannically as to create for the healthy worker a living hell which he must suffer eight hours each day.

The supervisor, of course, is not always the *bête noire* in the piece; frequently he himself is a victim of forces he cannot control. The policies and practices of top management may impose patterns of action which must inevitably produce conditions bordering on the intolerable to the "normal" worker.

Nor does it stop here. Top management in turn frequently finds itself responding zombie-like to the compulsive demands of our industrial culture. In a society which prizes pre-eminently production and profits, economic survival and success, top management can preoccupy itself with healthful conditions of work only at its peril; or, to put it another way, only if it can be shown that lack of healthful conditions imperils its primary goals.

A SOCIAL PSYCHOLOGIST LOOKS AT INDUSTRY

T. J. MALLINSON, Ph.D.

The major problems facing the psychiatrist working with industry are, I feel, primarily ethical problems, and only secondarily technical ones. I say this for two reasons, first, the particular stage of development which this branch of medicine is entering, and secondly, the peculiar nature of the subject matter dealt with.

With respect to the first point it is, I believe, fairly evident that as any branch of medicine moves from the treatment phase to the preventive phase of lowering hazards and raising immunity, the physician faces increasingly fewer *technical* problems and increasingly greater *ethical* ones. The nature of the decision to be made in recommending the general use of a new vaccine is entirely different in character from the decision to be made at the bedside of a seriously ill patient.

Psychiatry today is rapidly approaching the preventive stage. There is considerable agreement that the major difficulty underlying or associated with the innumerable varieties of mental disease, is the inability of the individual

to feel secure about his capacity to meet his needs—particularly those needs indigenous to his social relationships. Moreover, we have made considerable strides in specifying those conditions which enable individuals to gain this security, namely, the conditions of freedom; the freedom to understand oneself and one another better, and the freedom to apply such understanding; in other words, the essence of a good psychotherapeutic relationship.

However, such conditions highlight the peculiar nature of our subject matter, in that we are no longer dealing with individuals, but are making prescriptions which involve the possible alteration of the behaviour of *others* in the relationship. Nor would this be too difficult if there was general agreement as to the particular ends we have in mind. For example, the recommendation of a safety screen around a machine does involve changing others' behaviour, but the primary goal of individual physical safety is today well agreed upon. Not so, however, is the goal of individual psychic security.

Present-day technology demands particular kinds of skills and social relationships, whether on the side of production or marketing; the individual must learn *these* skills and work in *these* relationships or suffer accordingly. Moreover, we are now in an age of concentrating on consumption, since the battles of production have been won. This involves a vast increase in attempts to increase and *change* men's needs, rather than satisfy existing needs, with the result that fewer and fewer people manipulate objects, while more and more manipulate symbols and persons along the long road from raw material to the consumed product.

In brief, the very conditions under which the vast majority of individuals must work—decisions by fiat from "above"; non-related "part" functions; standardized routines of work and communication; utilization of "skills" rather than "individual personalities"—all these are the direct negation of those conditions which the psychiatrist views as leading to psychic health.

And yet we find a prominent psychiatric journal advising:

"In the field of personnel relations, policies governing the relationship between the employee and the company must be carefully developed and must be promulgated throughout the organization in such a way that uniformity of interpretation and application will be possible".

From this point of view, even the great and good developments which came out of the Hawthorne studies must be viewed with alarm, for they were interpreted merely as new means of achieving efficiency of production; the focus became the advantages of particular kinds of human relationships and particular kinds of personality patterns to particular goals of production. This emphasis is now widespread in the liaisons between industry and the social sciences generally, whether we look at the sociologist on the assembly line, the psychologist in the advertising department, or the psychiatrist in the sick-bay.

This, to me, is an inversion of our ethical commitments; this is why I feel the major problems of the psychiatrist working with industry are primarily ethical ones.

Present-Day Problems in Nursing

W. ROSS WRIGHT, M.D.¹

DURING the past twenty-five years medical knowledge has increased tremendously. New treatments, new drugs, and new types of equipment have been added to our armamentarium, creating greater demands on nurses today. They must know more than the nurses of twenty-five years ago and they must be skilled in the performance of many treatments formerly given only by doctors. Only recently have nurses been permitted to give intramuscular medication. This is now a routine nursing procedure everywhere. How long before intravenous treatments follow the same course?

In this age of specialization, we find the general practitioner asserting himself and reminding us that the patient must be considered as a whole and not as an aggregate of organs with isolated functions. Psychosomatic is a familiar word in medical parlance. Consequently, we find that nurses are now realizing the need for increased consideration of the psychological and psychiatric aspects of nursing.

Not only do we expect nurses to provide the best of bedside care for sick patients, which includes bathing, feeding, and bed-making; but we also expect them to administer the various drugs and treatments; and what is more important we expect them to act as eyes and ears for the attending physician. We depend upon their ability to observe accurately and to recognize symptoms which are of significance. We depend upon their judgment, whether to report immediately by phone, or to delay reporting until time of daily ward rounds. Not only is there a demand for increased training, increased ability and the finest human understanding in the individual nurse, but there is also an increased demand for trained nurses.

In Canada in 1930 there were 17 registered nurses per 10,000 population, in 1955 there were 35 registered nurses per 10,000 population. There are ten times as many nurses employed in hospitals as there were twenty-five years ago, and during that time the number of hospital beds has doubled. There are three times as many public health nurses today and many more are needed. The Victorian Order of Nurses and the Red Cross employ registered nurses. Trained nurses are being employed more and more by industry. Trans-Canada Airlines takes many of our registered nurses, and doctors are finding more and more that the services of nurses are indispensable in conducting office practices.

Today, in Canada, there is a great lack of nurses who are trained in administrative and supervisory work. The need for adequately trained personnel to staff our general hospitals, tuberculosis hospitals, and mental hospitals is far in excess of the supply. This also applies to the teachers—both classroom and

¹President, New Brunswick Medical Society.

clinical instructors. All the training schools throughout the country are short of adequately trained teaching personnel, and in many cases the services of qualified persons are not being used to the best advantage.

What History Tells Us

Let us now for a moment look into the history of nursing and find out, if we can, just how the nursing educational system has arrived at the place which it occupies in present-day society. When we look at the word "nursing" itself, we find that its origin is in the words "to nourish". The instinct of self-preservation has prompted mankind from the beginning of time to nurse the young, the sick and the aged. Medicine and nursing have long been very intimately associated, and in studying ancient history, it is difficult to differentiate between the two. As we trace the progress of medicine and nursing to more recent years we find that at times the two have been completely divorced. In the cultures of Egypt and India, medicine and nursing reached a very high degree of excellence; and it is interesting to note that in India, nurses were usually young men, although in the majority of cultures nursing was chiefly carried out by women. The Greek civilization which in the fifth century B.C. produced Hippocrates, the father of modern medicine, also developed nursing science to a very high degree. The next great man to influence both medicine and nursing was Galen who lived from A.D. 130 to A.D. 200. Galen's influence lasted until the fifteenth century when Vesalius, an anatomist, Paracelsus, a physician, and Ambrose Parè, a surgeon were bold enough to question Galen's teaching. Christianity has had a great influence upon the evolution of nursing. We read in the Gospel of Luke of a man who was travelling from Jerusalem to Jericho and fell among thieves who stripped him, wounded him, and left him to die, and of a Samaritan who took pity on him, bound up his wounds, brought him to an inn, and took care of him. Here we have an example of nursing care, and this teaching followed the Christians when they went through Greece and through Rome and later through Europe. In the Dark Ages we find that nearly all of the nursing that is recorded was done in the religious communities by both nuns and monks. During the reign of Henry VIII in England we find that the monasteries were suppressed and nursing suffered as a consequence. No alternative plan was made for nursing care when the monasteries were forced to give up this function.

The low ebb to which nursing sank is well illustrated by Dickens in his characterization of Sairey Camp. The nurse of that period, Mrs. Camp, is described by Dickens as, "a fat old woman, with a husky voice, and a moist eye which she had a very remarkable power of turning up and only showing the white of it. Having very little neck, it caused her much trouble to look over herself, if one may say so, to those to whom she talked. She wore a very rusty black gown, rather the worse for snuff, and a shawl and bonnet to correspond. Mrs. Camp's nose in particular was somewhat red and swollen, and it was difficult to enjoy her society without being conscious of the smell of spirits. Like most persons who have attained to great eminence in their profession, she took to hers very kindly; insomuch that, setting aside her natural predilections as a woman, she went to a lying-in or a laying-out with equal zest

and relish." Although Mrs. Gamp was already employed by a patient during the day, she went to do night watching; and the report which she received from the day nurse, Mrs. Prig, was as follows:

"The pickled salmon", Mrs. Prig replied, "is quite delicious." "I can partick'ler recommend it. Don't have nothink to say to the cold meat for it tastes of the stable. The drinks is all good. The physic and them things is on the drawer and mankleshelf," said Mrs. Prig cursorily. "He took his last slime draught at seven. The easy-chair ain't soft enough, you'll want his piller."

The total nursing care which Mrs. Gamp gave to her patient during that night is described in the following terms:

"Her patient a young man, dark and not ill-looking with long black hair. His eyes were partly open, and he never ceased to roll his head from side to side upon the pillow. Mrs. Gamp solaced herself with a pinch of snuff, and stood looking at him with her head inclined a little sideways, as a connoisseur might gaze upon a doubtful work of art. Stooping down, she pinned his wandering arms against his side "Ah," said Mrs. Gamp, walking away from the bed, "he'd make a lovely corpse."

There was no marked improvement in the situation until Florence Nightingale, the founder of modern nursing (1820-1910), revolutionized the practice and teaching of nursing. Florence Nightingale, a cultured woman of great courage, fought against the artificial conventions of the society of her time. And because of the opportunity which presented itself in a time of war, she was able to gain recognition. As a result of her untiring energy, the death rate during the Crimean War fell from 400 per 1,000 to 22 per 1,000. Miss Nightingale established a training school for nurses at St. Thomas' Hospital, which was financially independent because of the large sums of money the British nation gave to Miss Nightingale in gratitude for her services. It is interesting to note that this school was entirely independent and not under the jurisdiction or control of the hospital, although the facilities of the hospital were available for the training of nurses. Primarily, because of the lack of financial support, the training schools which followed this one came under the jurisdiction of hospitals, and when this happened, the service required of nurses-in-training became, at times, the dominating factor during the three-year course of training in many of the hospitals.

The Nursing Situation in Canada

Let us now examine the Canadian scene in nursing, focusing our attention on nurse training. We find that many hospitals throughout Canada have their own nursing schools and that the type of education which the nurses have received in each of these hospitals has varied greatly. In some, the service requirements have been so great that the amount of time actually devoted to teaching is at a minimum. In others, the hospital boards, realizing the importance of a well-trained nursing staff, have devoted a great deal of time and money to the training of nurses.

The Canadian Nurses' Association has long recognized the lack of uniformity and the inadequacies of training in the present system. In 1952 a statement, "Policies Regarding Nursing Education", containing six major recommendations, was approved by the Canadian Nurses' Association. It emphasized that the preparation of the nurse should be an educational

experience, and the method by which this can be best achieved is through an independent school which plans and controls the complete experience of the student, and also that government support of nursing education is an obvious corollary.

In 1927 the Canadian Nurses' Association and the Canadian Medical Association formed a joint committee to consider the problem of nursing education. As a result of this committee's work a Canada-wide investigation of the situation was undertaken by Professor George Weir, head of the Department of Education of the University of British Columbia, and in 1932 the results of his investigation were published. Although many of his recommendations have been adopted, many major changes which he advocated still have not been implemented. For example, he recommended that hospitals conducting approved training schools should budget separately for the latter. As in the case of the normal school for training student teachers, the net cost of training student nurses should, in the judgment of the survey, be paid by the provincial government. He recommended also that the approved training school for nurses should be considered as an educational institution rather than an economic asset to the hospital. From an educational point of view the eight-hour day is sufficiently long. Exploitation of the student nurses under the guise of educational training should be stopped.

In 1946, because of its belief that the present system of training nurses was out-moded and inadequate to meet the requirements of the day, the Canadian Nurses' Association, with the financial support of the Canadian Red Cross Society, decided to try an experiment in teaching, and from 1948 to 1952 the Metropolitan School of Nursing of Windsor, Ontario was conducted. Its main objectives were to establish nursing schools as educational institutions, separate entities in their own rights; and to demonstrate, if possible, that a skilled clinical nurse can be prepared in a shorter period than three years once the school is given control of the student's time.

In 1950 the Atkinson School of Nursing was developed in connection with the Toronto Western Hospital. The objectives of this school were to increase the number of recruits for the nursing profession, and to improve nursing education by giving the school complete control of the student's time and by substituting for the old three-year course a concentrated course of two years' instruction followed by a year of internship. The results of both of these experiments have been highly successful. They have shown that in a two-year course, it is possible to train a nurse in all aspects of her work as well as in the former three-year course, and, in addition, to give her educational experience and knowledge which was not given in the old type of training. Some interesting figures on the cost of nursing education have also been obtained. There is a very close parallel in the figures between the two schools, and the estimated cost per student of the Metropolitan School was \$2,500 for a two-year period. In the Atkinson School of Nursing the total cost was \$2,604 for a similar two-year period. In *controlled* schools cost of a three-year hospital course was estimated at \$3,900 or \$1,300 a year. Surely very few of our hospitals have any conception of the cost of operating a school of nursing. In fact, if actual costs were known, some of our boards of trustees might hasten

to find means of closing their schools and obtaining nursing service on the open market, provided, of course, an adequate supply of trained persons was available.

Miss G. B. Carter, nursing consultant with the World Health Organization, in the May 1956 issue of the *Canadian Nurse* has stated that the argument which would do more than anything else to convince the hospital authorities, public and private, would be research demonstrating that the apprenticeship system with its high turnover and wastage of labour is economically unsound.

Today in the nursing profession a spirit of unrest and dissatisfaction is prevalent. Each year for the past decade or so, the average length of time that a nurse stays in any one position has become shorter and shorter. This constant changing of key personnel is a very disturbing factor to the administrators of hospitals.

Solving the Problem

What then are the answers to the dilemma in which the nursing profession now finds itself? How can this sense of frustration, all too evident at times, be overcome? How can the problem of the shortage of ward supervisors and classroom instructors be solved? What steps can be taken to keep well-trained and well-qualified nurses in key positions for more than a few months? The problems are many; and, as always, one of the greatest is the financial one. How can the expenses of nursing education be met? Let us first of all ask ourselves if our present system of making patients pay for the teaching of the nurses is the correct procedure. Not only must the poor sick man today pay for his own nursing care, while he is in the hospital, but he must also pay for training the nurses who take care of him. Nor does it end there. He must pay, in addition, the educational costs of nurses in Public Health, the Victorian Order of Nurses, Department of Veterans' Affairs Hospitals, Trans-Canada Airlines, doctors' offices, industry, and all other occupations in which nurses today find employment.

If this is the correct procedure, then the hospitals, and ultimately the sick, should be asked to support the medical schools in our country. Such is not the case. Medicine has before this burst the shackles of the apprenticeship system of education. The maintenance of nursing schools is just as important to society as the maintenance of teachers' colleges or the maintenance of our universities which provide educational facilities for medicine, dentistry, engineering, law and other professions.

If independent, government-financed schools of nursing are the solution to the problem, then what should be the minimum education requirements of a nurse? Surely it is not possible for those taking care of the sick to be too well educated. Sir Richard Livingston, President of Corpus-Christie College of Oxford, England, in discussing the aims of education said:

"Its chief aim is to help to make human beings. Its second object is to introduce us to the world into which we are born in order that we may understand enough to live in it intelligently and learn to control it."

And finally he states:

"If I were to give in a single phrase the definition of an educated man I would say that he is a man who knows what is first rate in as many fields of life as possible."

The best educated and the most highly cultured people are needed in the nursing profession today. We need not fear over-education, but Pope's maxim, "A little learning is a dangerous thing", is still true. How many times have we heard it said that a nurse does not need a college education in order to give a patient a drink of water, make a bed, carry a bed-pan, and provide the ordinary care which every person in hospital needs? How true this is. We now have come to look upon caring for a patient as the function of a team and in recent years nursing assistants have been brought into the picture. The greater demands that are now being made upon our registered nurses make it essential that more people be recruited and trained in the field of nursing assistants than ever before. If this nursing team is to function as a smooth-working unit, then it is essential that the Nurses' Association take active leadership in fully developing this group. Nursing assistants should form a large part of the nursing staff in the hospitals of today. The Nurses' Association should not only control the education of the nursing assistants and clearly define the extent of their duties, but it should also seek legislation to incorporate this group as an integral part of the nursing team.

The relatively short-term employment for key positions must be overcome, if efficiency in nursing is to be attained. In the first place, salaries must be commensurate with training and experience. When the salaries of head nurses, supervisors and teachers in the nursing profession are brought to a level comparable with those in other walks of life, we can hope that more nurses will choose these fields as their life work.

There is also a place for men in nursing, not as glorified orderlies; but as well-educated men who will give leadership and fill responsible positions in teaching and administration. Once a living wage is established whereby a man may choose nursing as a lifetime career, then we may once again hope to have positions filled for years instead of months. With the acute shortage of nursing personnel in our mental institutions, there are now many opportunities for employment of male nurses in this field. Staff nurses today spend a large portion of their time doing secretarial work such as charting, requisitioning and other documentation. Surely this is a waste of valuable nursing time. As important as charting may be, this could be done by a competent secretary, under the direction of a nurse in a fraction of the time it takes the nurse to do it under the present system of long-hand writing. If supervisors were relieved of the pen-pushing, there would be time for supervision.

The shortage of nurses has reached a critical stage. The teaching methods of a century ago are not adequate for the nursing profession of the present generation. I have endeavored to present some of the causes of this distressing problem. A survey has been conducted in this province during the past year by Miss Kathleen Russell. Her report will be released in the near future and I would urge careful study of this report.

We of the medical profession have been asked by the nursing profession to help them provide the type of nursing service which we require and expect of the nurses of today. Not only should we be willing to acquiesce in this request, but we should be prepared to give leadership in this very important field.

Canadian Journal of Public Health

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KNOW YOUR ASSOCIATION—ITS PURPOSES, ORGANIZATION AND FINANCING

THE charter of the Association, granted by Act of Parliament of Canada in 1912, defines the purpose of the Association as "The diffusion of the knowledge of sanitation in all its branches". This definition may, today, be considered by some as outmoded. However, it embraces all conditions that affect health and all that pertains to healthful living and is, therefore, modern in its scope. Those who drafted the charter expressed broadly the Association's functions and the years that have passed have shown their wisdom. In its early years, the Association served partly as a lay organization in public health but for the past thirty years, the Association has served as the professional society of public health workers. In its work the emphasis has been placed on professional education. The Association has established qualifications for public health personnel, has assisted in the training of sanitary inspectors, and for forty-eight years has published a scientific journal.

The Canadian Public Health Association is a national organization with eight provincial branches or affiliated associations. One of the most important developments in its work has been the furthering of the organization of provincial public health associations. These are: the British Columbia Branch, the Alberta Division, the Saskatchewan Branch, the Manitoba Public Health Association, the Ontario Public Health Association, Le Société d'hygiène et médecine préventive de la Province de Québec, the New Brunswick-Prince Edward Island Branch, and the Atlantic Branch (Nova Scotia). Each provincial association convenes an annual meeting, thus providing a conference of public health workers annually in each province.

Active membership in the Association is limited to those engaged in public health but associate membership is provided in the charter for others who desire to support the work of the Association. The governing body of the Association is the Executive Council, which is fully representative of the membership and of all parts of Canada. The Council meets during the annual convention and its recommendations are presented and considered at the annual meetings by the members. Between meetings, the authority of the

Council is vested in the Executive Committee which is named at the annual meeting. As the Executive Committee is also national in its representation, a nucleus committee, resident in central Canada, is convened to permit conducting more readily the work of the Executive.

The officers of the Association are: President, President-Elect, Past Presidents, three Vice-Presidents, Honorary General Secretary, Honorary Treasurer and the Editor of the Canadian Journal of Public Health.

In keeping with the development of special fields in public health and of the interest of the members of the various professions contributing to public health, groups of members with special interests have been organized as sections in both the national and provincial associations. Each section provides the opportunity for the holding of meetings and, through committees, for the study of problems of special interest. Sections have been provided for the consideration of mental hygiene, nutrition and health education. At the Third Annual Conference on Medical Care, convened with the last congress of the Canadian Public Health Association, a section on medical care was established and, at this time, the first meeting of the section was held. The section on laboratory work has for the last twenty years held a Christmas laboratory section meeting, which has been regularly attended by more than a hundred bacteriologists and other laboratory workers. The public health nursing section serves public health nurses; the veterinary section, public health veterinarians; and the dental health section, dental health officers. The section on sanitation and public health engineering includes in its membership sanitary engineers and sanitary inspectors. The vital statistics and epidemiology section was one of the earliest sections established and through its committees, a close relationship is maintained with the Dominion Bureau of Statistics and the Department of National Health and Welfare.

The executive officers serve without remuneration and other members give generously of their time on administrative and study committees. In its forty-five years of work, the Association has only had the services of a salaried executive officer for a period of three years, during which time a special field study was conducted. As a result of such generous contribution of services by the members, the expenses of the Association are a fraction of the amount that otherwise would be necessary to conduct its work. Of the expenditures of approximately \$27,000 a year, printing and distributing costs of the Journal exceed \$15,000. The expenditures are met in part through the provincial associations contributing, at present, \$2.00 of their conjoint membership fee to the national Association. The provincial departments of health, recognizing the Journal as an important part of professional education, assist by providing the Journal to all members of their respective provincial associations. Revenue is also received from advertising space in the Journal, and from commercial exhibits at annual meetings.

The strength of the Association lies in the services of its members which are so generously contributed. The success of past years assures the future, provided that the same spirit of responsibility continues to be felt by all members.

A GREAT LEADER PASSES

ON January 8, Dr. Charles-Edward Amory Winslow died in New Haven, Connecticut, at the age of seventy-nine. The members of the public health profession in Canada pay tribute to his memory and honour his name. To public health nurses, he was a true friend and counsellor; to laboratory members, a devoted research worker in microbiology; to sanitarians, the outstanding authority on housing and ventilation; to those in mental hygiene, a great pioneer; and to health administrators, a forward-looking, courageous leader. His field of service was the world and he gave generously to the promotion of world health.

Born in Boston in 1877, he received a B.S. degree from the Massachusetts Institute of Technology in 1898 and the M.S. degree in 1910. He received the honorary degree of Doctor of Public Health from New York University in 1918. In 1915 he established the Department of Public Health at Yale University and under his leadership the Department became one of the outstanding schools of postgraduate training in public health, the work of which has been continued under his able associate Dr. Ira V. Hiscock.

Dr. Winslow held many important appointments. He was President of the American Public Health Association; Curator of Public Health, American Museum of Natural History; Senior Sanitarian of the United States Public Health Service; President of the Society of American Bacteriologists; and Editor-in-Chief of the American Journal of Public Health. His address, presented as president of the American Public Health Association in 1926, foretold the future of public health. In this memorable address, in the role of prophet, he boldly claimed "that the medical officer of health of the future, in co-operation with the medical profession, would see that the people under his charge, in city or country, in palace or tenement, would have the opportunity of modern scientific medical care including laboratory services and specialized consultant services on terms which would make it economically and psychologically easy of attainment".

Following his retirement in 1945 from major responsibilities, Dr. Winslow accepted an invitation of the Committee on Professional Education of the American Public Health Association to visit and report on the functioning of the Schools of Hygiene on this continent, thus establishing a basis of accreditation of institutions providing postgraduate training in public health. Recommendations which he made during the years in which he visited the Schools of Hygiene established certification of schools as a valuable contribution to the strengthening of postgraduate instruction. The visits which he made to the School of Hygiene, University of Toronto, were deeply appreciated and were most helpful.

Dr. Winslow received many honours, including the Leon Bernard Foundation Prize in Geneva for outstanding contributions in international public health, the Albert and Mary Lasker Award of the American Public Health Association, and the Sedgwick Memorial Medal.

To his wife, Mrs. Anne Fuller Winslow, and their daughter, Dr. Anne Winslow, the Canadian Public Health Association expresses its deep sympathy.

Special Articles

Children's Health Service, Newfoundland

HON. DR. JAMES M. McGRATH,

Minister of Health, Department of Health, Newfoundland

As the first phase the Children's Hospital Plan effective January 1, 1957, provides for all children in Newfoundland under sixteen;

- (1) Out-patient X-ray and laboratory procedures and tests.
- (2) Ward accommodation in hospital.
- (3) X-ray and laboratory procedures and tests while in hospital.
- (4) Drugs and dressings while in hospital.

It does not provide for doctors' bills either in or out of hospital.

Information for Parents, Physicians, and Hospitals

In order to obtain the benefits of the plan a recommendation must be made by the family doctor. Parents must not expect to have their children given any tests, or be admitted to hospital, unless the family doctor certifies that such services are necessary.

There will be no bill from the hospital unless parents request and receive semi-private or private accommodation for their children. In such cases the Department will still pay the charge for ward accommodation and the parent will be responsible only for the difference between this charge and the charges for any special accommodation.

Cottage Hospital Subscribers will now be able to obtain semi-private or private accommodation, when available, for their children by paying the difference in charges and will not have to pay any charges for X-ray or laboratory tests.

It will no longer be necessary for parents who are unable to pay hospital bills to have any certification by a Welfare Officer unless they are also unable to meet doctors' bills (where such bills are payable) while the child is in hospital.

For example, if a child under sixteen is admitted to a hospital ward bed, parents will not have to pay any bills to the hospital but may have to pay the doctor's charges for operations, for medical or surgical treatment, for anaesthesia or for special consultations. It is hoped, however, that the absence of all hospital charges will make it easier for parents to meet such charges where they have to be met.

In most cases no proof of age will be required as the child's age will be obvious. In doubtful cases, however, the hospital will be entitled to ask the parents for proof that the child is under sixteen years of age.

REGULATIONS

1. These regulations may be cited as The Children's (Free Hospitalization) Regulations, 1956.

2. In these regulations—

- (a) "diagnostic procedures" means Roentgenological (X-ray) examinations and includes laboratory procedures carried out in a hospital or laboratory approved by the Minister;
- (b) "parent" includes legal guardian;
- (c) "private hospital" means a hospital other than one controlled by the Province;
- (d) "ward accommodation" includes necessary medicines and diagnostic procedures while in hospital but does not include the personal services of medical practitioners unless there exists some contractual obligation to render those services apart from the Act and these regulations.

3. These regulations apply to all hospitals in the Province controlled by the Province and all private hospitals with which the Minister from time to time makes contracts in connection with the providing of the services.

4. On and after the 1st day of January, 1957, every child is entitled to

- (a) out-patient diagnostic procedures; and
- (b) ward accommodation in a hospital if the necessary ward accommodation is available in accordance with these regulations.

5. Each child is entitled to ward accommodation only in a hospital, and if a child, at the request of its parents, is accommodated in a private or semi-private room in a hospital the parents shall pay to the hospital the fees and expenses, if any, in excess of those which are payable to the hospital under the contract made by the Minister under the Act in respect of ward accommodation in a private hospital or those set by the Minister in the case of ward accommodation in a hospital controlled by the Province.

6. Recommendation for admission of a child to hospital or to out-patient diagnostic procedures shall ordinarily be made by the medical officer of the district in which the

child normally resides, or by the child's ordinary medical attendant in the case of a private practitioner, but in an emergency such recommendation may be made by any registered medical practitioner.

7. A child is not entitled to admission to hospital or to out-patient diagnostic procedures except in accordance with the ordinary admitting routine of the hospital concerned and in any event not without the consent of the admitting officer of the hospital and, except in cases of emergency, a doctor shall not send a child to a hospital until the doctor has been notified by the admitting officer of the hospital that the accommodation required by the child is available.

8. The admitting officer of a hospital may admit a child without proof of age but he is entitled to demand proof of age when he considers it desirable and if proof of age is not produced when the admitting officer demands it the child is not entitled to the benefits conferred by the Act and these regulations until the proof of age is produced to the admitting officer.

Maternal and Child Health Services in Europe

JEAN F. WEBB,¹ M.D., D.P.H.

EVER since my interests have been focused on the health needs of mothers and children, the far fields where life's first year has fewer hazards have had a great attraction. A few months ago, I had an opportunity to observe maternal and child health services in England, Scotland, Denmark, Norway, Sweden, Finland and the Netherlands, countries with infant mortality rates which are the envy of the world.

Some of the most striking contrasts in the pattern of maternal and child care were in the field of maternity care. In a number of countries more than half of all expectant mothers received prenatal medical care at

maternal welfare centers which were an essential part of the public health services. These clinics were attended by physicians who were sometimes full-time, salaried employees but, more often, practising physicians serving on a part-time basis.

Trained midwives or nurse-midwives provided much of the health supervision and care of normal expectant mothers. In addition to attending clinic the midwife was able to carry her services into the home. This enabled her to develop a very close relationship with the family which was reassuring when she returned to the home to attend delivery and provide postpartum care. Although there appeared to be a trend toward hospital delivery in all countries except the Netherlands, the

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midwife still retained her important responsibility for care at normal confinement by attending a significant proportion of deliveries which occurred in hospital. Supervisory positions in maternity departments of hospitals were held by midwives or nurse-midwives.

In Denmark, assistance to prenatal care varied. The state provided, free, three visits to a doctor and seven visits to a midwife. Seventy-five per cent of expectant mothers availed themselves of this assistance.

In all countries there was an evident interest in prenatal education and preparation for childbirth. Teaching was often shared between midwives, who did the prenatal teaching, and public health nurses, who taught infant care, or mothercraft, as it was appropriately called. Physiotherapists, where they were available, took an active part in the teaching of exercises and relaxation, and it was considered particularly important that midwife instructors be taught these aspects of the program by physiotherapists.

The training of midwives varied from 18 to 36 months. Midwifery training for a trained nurse was usually shorter. There was a trend in most countries toward combined nurse-midwifery training. I was reminded more than once of the recognized status of midwifery and the fact that midwifery training antedated nursing training by many years.

After a while it became difficult for me to think of maternity care without midwives. One conclusion reached was that maternity care in Canada might be strengthened by a further emphasis on the supportive, health supervisory, and educational role of the co-worker of the doctor, who in Canada is the public health or obstetric nurse. Programs for nursing supervision and education of the expectant mother may be more difficult to organize in Canada where most of

the prenatal medical care is provided by private physicians, but the growth and success of prenatal group-teaching is evidence of the need and acceptance of it on the part of both mothers and doctors. Further co-operation between practising physicians and health agencies will undoubtedly result in extension of such programs. Of distinct value, too, have been the special institutes and other preparation for nurses which have enabled them to broaden the scope of their teaching and nursing supervision of mothers.

Direct methods of assistance to expectant mothers and infants in addition to medical care were common. These took the form of financial grants, layettes or low-cost nutrition supplements. Employed mothers were usually given special grants and leave for the protection of themselves and their babies.

Facilities and services for child health supervision consisted of child welfare centers similar to our child health centers, and home visiting by public health nurses—a familiar pattern. These services were widely available in all countries, under the auspices of the local health authority. Sometimes voluntary agencies assisted in the provision of them. In all countries, the majority of infants received health supervision under these auspices, the proportion ranging from 60% to 90%. It was helpful to find that these statistics were readily available. A real effort was made in all countries to determine the proportion of the population which availed themselves of public health services.

In some countries considerable emphasis was placed on early home visiting of infants. In Britain, for example, where home confinements were often attended by midwives of the local health authority, postpartum and newborn care was a continuing part of the service up to at least 14

days postpartum. Where delivery occurred in hospital, close liaison had been developed between hospitals and local health authorities, so that the latter were notified of discharges promptly and were able to visit homes within a few days. Another manifestation of the emphasis on services in the home was the organization in England, particularly, of home-care programs for prematures. These were set up to provide intensive nurse-midwife supervision of prematures born at home or discharged to home care before reaching full-term weight. These programs not only reduced the need for hospital beds and the risk of hospital cross-infection but were an invaluable educational experience for the mother and the rest of the family. Infant health supervision in Denmark was provided mainly by means of home visiting by public health nurses. The first visit was made as soon as possible after birth, and was repeated as often as considered necessary, commonly eight to twelve times during the first year. Over 90% of families in the areas served benefited from this service. Medical examination was provided free by the state at five weeks, five months, and at intervals up to school age, when school health services took over. This could be obtained at child welfare centers or through private physicians.

Another interesting group which played an important role in all countries visited were home helps, or what we would term visiting home-makers. They seemed to hold a well-established place in the health or welfare organization of the communities. Several countries had extensive training programs for these workers, at the completion of which they achieved recognized status and

were assured of appropriate employment through organized community agencies, often a part of local government. The emphasis in the utilization of these workers was on maintaining the home at the time of maternal illness or absence. In the Netherlands, they were known as maternity aides and were given special preparation to enable them to care for mothers and newborn infants following home confinement. This training program and service was organized and supervised at the local level by midwives. Much of the continuing success of home delivery in the Netherlands was attributed to the excellent services of these workers.

In general, I received the impression that the health agencies in the countries visited were more deeply involved in the provision of health services for expectant mothers and young children than in Canada. This was manifested particularly in the prenatal health supervision service which was provided for expectant mothers and by the emphasis on home visiting of infants, particularly newborns. Two other important methods of assistance were the direct grants to mothers in the form of financial grants or nutrition supplements, and the community acceptance of responsibility for the provision of house-keeping assistance in the home.

All these programs and services, in addition to making health supervision readily available, combined to focus community attention on the health needs of these important members of the community and to increase the general awareness of their health needs. In view of the above national concern expressed in broad programs and services, the excellent records of maternal and infant survival in the countries visited were not surprising.

**The President
of the
Canadian
Public Health
Association
Welcomes You**



IT is indeed a pleasure to speak to you of the forty-fifth annual meeting of the Canadian Public Health Association which is being held jointly with the Ontario Public Health Association. The meetings will be held in Toronto, May 27-29 at the King Edward Hotel.

We are being honoured by the holding of the annual conference of the State and Provincial Health Authorities of North America in Toronto on May 26. In arranging their meeting in this way, the commissioners of health and executive officers of the various states will be with us in our meetings. Their presence will add much to our deliberations.

The work of the Canadian Public Health Association with its provincial associations or branches is steadily expanding. Two sessions of the Executive Council, the governing body of the Association, will be held in order to provide sufficient time for the formulation of policies to be presented at the annual meeting of the Association. The Canadian Public Health Association is thoroughly democratic and the annual meeting provides the opportunity for the consideration of its work by the members.

The Program Committee has prepared a comprehensive and balanced program. There will be three general sessions, and nine section meetings, thus permitting the presentation of papers and discussions of problems in all fields of public health.

On behalf of the Association, I extend to all health workers in the Dominion, as well as others who may be interested, a most cordial welcome to this highly important conference of public health workers.

L. A. PEQUEGNAT, M.D., D.P.H.
President.

Preliminary Program

Directory of Sessions

MONDAY, MAY 27

- 9.00 a.m.—Registration.
- 9.30 a.m.—Plumbing Inspectors' Section, O.P.H.A.
- 10.00 a.m.—Conference of the Minister of Health for Ontario and officers of the Ontario Department of Health with local Medical Officers of Health.
Section Meetings: Environmental Hygiene, C.P.H.A., O.P.H.A.
Medical Care, C.P.H.A.
- 12.30 p.m.—Luncheon.
- 2.00 p.m.—Minister of Health's Conference.
Section Meetings: Medical Care, C.P.H.A.
Veterinary Public Health, O.P.H.A.
Public Health Nursing, C.P.H.A., O.P.H.A.
Dental Public Health, C.P.H.A., O.P.H.A.
Plumbing Inspectors, O.P.H.A.
Vital and Health Statistics, C.P.H.A.
Public Health Education, C.P.H.A.
- 2.30 p.m.—Executive Council, C.P.H.A. (Session I)
- 6.30 p.m.—Resolutions and Nominations Committee, O.P.H.A.
- 7.30 p.m.—Executive Council, C.P.H.A. (Session II).
Board of Directors, O.P.H.A.

TUESDAY, MAY 28

- 9.30 a.m.—General Session.
- 2.00 p.m.—Section Meetings: Health Officers, C.P.H.A., O.P.H.A.
Public Health Nursing, C.P.H.A., O.P.H.A.
Dental Public Health, C.P.H.A., O.P.H.A.
Environmental Hygiene, C.P.H.A., O.P.H.A.
Public Health Education, C.P.H.A.
Medical Care, C.P.H.A.
Vital and Health Statistics, C.P.H.A.
Veterinary Public Health, O.P.H.A.
- 6.30 p.m.—Presidents' Reception—Dr. L. A. Pequegnat, C.P.H.A., and
Dr. D. F. Damude, O.P.H.A.
- 7.30 p.m.—Annual Dinner.

WEDNESDAY, MAY 29

- 9.30 a.m.—Section Meetings: Dental Public Health, C.P.H.A., O.P.H.A. } Combined
Health Officers, C.P.H.A., O.P.H.A. } Session
Public Health Nursing, C.P.H.A., O.P.H.A.
Public Health Education, C.P.H.A.
Veterinary Public Health, O.P.H.A. } Combined
Environmental Hygiene, C.P.H.A., O.P.H.A. } Session

**Forty-Fifth Annual Meeting, Canadian Public Health
Association**

in conjunction with

**Eighth Annual Meeting, Ontario Public Health
Association**

May 27, 28, 29, 1957

Conference of the

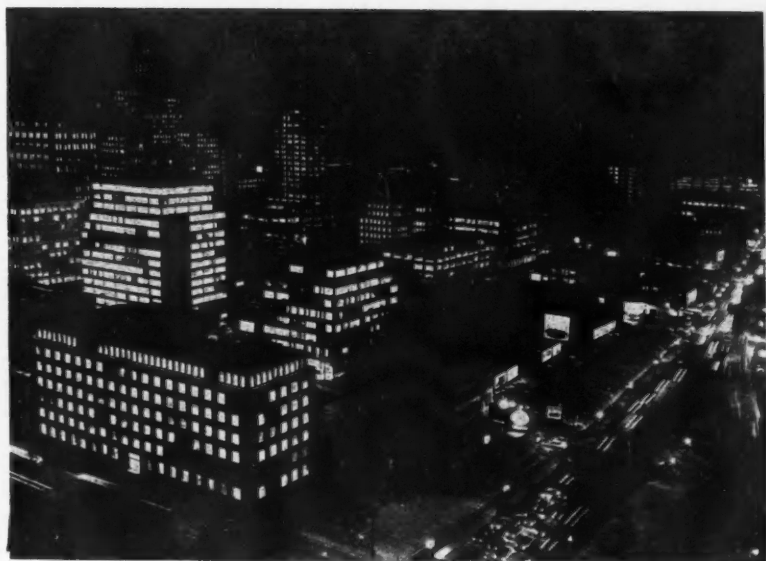
State and Provincial Health Authorities of North America, May 26

THE first annual meeting of the Canadian Public Health Association was an occasion of great public interest. The Duke of Connaught, Governor-General, took an active interest in this effort to direct attention to public health. Lord Strathcona, Vice-Patron, expressed his personal interest by making a generous contribution to the newly formed Association designed to permit the bringing together of public health officers and leading citizens. Without question, the success of that meeting in directing the attention of both the government and the public alike to the need for health conservation and health promotion, established the annual meeting as one of the most important contributions which the Association can make to the advancement of health in Canada. Through the years, recommendations and resolutions passed at the annual meetings, the findings of study committees, and the facts revealed by individual investigators of health problems, have resulted in important legislation and the extension of health services by federal, provincial, and local health authorities. The annual meeting is the centre of the Association's work and each meeting has provided the opportunity for those working in public health to confer with others, discussing common problems and sharing plans. Nothing can take the place of the annual meeting, for it makes possible hearing rather than reading the thoughts of those who present papers and lead in discussions. The annual meeting is held in turn in the west, central and the eastern sections of Canada. This year the meeting is in Toronto and this makes possible the sharing of the meeting with the Ontario Public Health Association. Of special interest is the holding of the Conference of State and Provincial Health Authorities of North America, under the presidency of Dr. M. R. Roth, Deputy Minister of Health, Saskatchewan.

The sessions of the newly established section on Medical Care will include the developments in hospital insurance on federal and provincial levels. It will be recalled that this section was established at the last meeting at Saint John, New Brunswick, following the holding of three annual medical care conferences. These conferences brought together the various groups interested in the problems concerning more adequate medical, hospital and nursing services. As a result of the decision of the members of the conference, a section was requested in the Canadian Public Health Association to be devoted to the discussion of medical care problems.



TORONTO'S NEW SKYLINE



DOWNTOWN TORONTO

The annual meeting provides for the sessions of the Executive Council, which is the body responsible for planning the policies and the work of the Association. The Executive Council brings together members from all the provinces and representatives of the eight provincial public health associations or branches. The findings of the Executive Council are presented to the annual meeting for consideration and discussion. The Council will give consideration this year to a number of important subjects. Among these will be a report on the place of the Canadian Public Health Association in the field of voluntary health agencies, based on Dr. G. J. Wherrett's proposals as presented in the Journal in November, 1956. An important subject is the possible extension of the work of the Association in conducting surveys and studies of problems of health administration when requested to do so by provincial or local authorities. In this connection, the Association is fortunate in having in its membership senior public health officers whose services might be available for such an extension of the Association's work.



ONTARIO PUBLIC HEALTH ASSOCIATION WELCOMES YOU

ON behalf of the Executive Committee and members of the Ontario Public Health Association, I desire to join with Dr. Pequegnat, President of the Canadian Public Health Association, in urging every public health worker in Canada to be present at the forthcoming congress. The program is outstanding. Your presence will help to make possible the best meeting in our history.

A very warm welcome awaits you.

D. F. DAMUDE, D.V.M., D.V.P.H.,
President.

The responsibility of every public health worker in Canada to his provincial association and, in turn, to the Canadian Public Health Association will be another subject that will be thoroughly discussed. The Association cannot make its voice heard unless it has the united support of all who are serving in public health in Canada today.

Toronto, at the end of May, is Toronto at its best. Those who have not visited Toronto recently will be surprised at the expansion of the city, both in its business and residential areas. Metropolitan Toronto now includes thirteen suburban municipalities and has a population of 1,250,000.

NEWS NOTES

The editor of the Journal regrets an error in publishing the names of the presidents of the Association as contained in the historical outline of the Association in the January issue. The president of the Association in 1931 was Dr. F. C. Middleton, D.P.H., and not Dr. W. R. Coles. Dr. Middleton is resident in Regina, Saskatchewan.

International

The tercentenary of the death of William Harvey (1578-1657) will be commemorated by an International Congress on the Circulation. It will be held at the Royal College of Surgeons, London, June 3-7, 1957.

The Ninth International Congress on Rheumatic Diseases will be held in Toronto, Ontario, from June 23-28, 1957. More than twelve hundred medical scientists from more than forty countries are expected to attend. Two hundred scientific papers will be presented dealing with medical, social and scientific aspects of diagnosis, treatment and rehabilitation of persons suffering arthritis and other forms of rheumatic disease.

The Seventh International Cancer Congress under the sponsorship of the International Union Against Cancer, will be held in London, England, July 6-12, 1958, under the Presidency of Sir Stanford Cade. Congress headquarters will be The Royal Festival Hall.

Federal

At its fall session, the Territorial Council for Yukon approved a plan for an extension of public health services in that territory. The overall proposal includes appointment of a full-time chief medical officer of health and an increase in the number of public health nurses to five, with stenographic and clerical staff. The costs will be shared between the Territorial government and the Indian and Northern Health Services, Department of National Health and Welfare. It is hoped to have the plan in operation in 1957.

Two distinguished visitors from abroad have recently been guests of the Department of National Health and Welfare. During his first official visit to Canada, the recently-elected director-general of the Food and Agriculture Organization of the United Nations, B. R. Sen, addressed departmental officers on the aims and organization of FAO and in particular on the work being done by its nutrition division in conducting surveys

and setting up programs, in co-operation with WHO and UNICEF, to control diseases caused by nutritional deficiencies. The second visitor was Dr. Charles C. Wedderburn, a principal medical officer of the Ministry of Health for Jamaica, who spent some time in Ottawa early in January discussing medical care programs. Dr. Wedderburn, who travelled in the United States and Canada on a WHO fellowship, is responsible for formulating a health insurance scheme for his country.

Two recent appointments to the head office staff of the Indian and Northern Health Services, Department of National Health and Welfare, are Dr. R. A. Armstrong, formerly in general practice in Ottawa, and Dr. Elizabeth Cass, formerly of Gibraltar. Dr. Cass, an ophthalmologist, will make a survey of eye conditions among Indians and Eskimos and eventually provide necessary eye treatment services. She will work mainly in the James Bay area, Quebec City and district, and Brantford, Ontario. Later this year she will travel from Quebec City to Churchill, Manitoba, on the "C. D. Howe" to work among the Eskimos of the eastern Arctic.

To keep pace with the flood of applications for migration to Canada a number of new appointments and postings have been made in the Immigration Medical Services, Department of National Health and Welfare. The office in Karlsruhe, Germany, has been closed and a new office opened in Stuttgart under Dr. D. A. Smith, Stoney Creek, Ontario, formerly on the staff of the Karlsruhe office. Dr. H. W. Soby, also of the Karlsruhe office, recently completed postgraduate training in diseases of the chest at Brompton Hospital, London, and has been transferred to Halifax, N.S. A new office has been opened in Bristol, England, in charge of Dr. B. Scott Leslie, Halifax. Dr. Irwin Schatz, formerly of Winnipeg and Vancouver, joined the Service in January and has sailed for London. A number of Canadian doctors, most of whom are engaged in postgraduate study overseas, have joined the Service on a temporary basis.

Mrs. D. B. Sinclair, O.B.E., M.A., LL.D., D.Sc.Soc., L.H.D., executive assistant to the deputy minister of welfare, Department of National Health and Welfare, has been granted a year's leave of absence to serve as deputy director of the United Nations Children's Fund (UNICEF), an

agency noted for its extensive public health and welfare work on behalf of children in many parts of the world. Mrs. Sinclair has been Canada's delegate to UNICEF since 1947. She served as chairman of its program committee from 1948 to 1950 and as chairman of its executive board in 1951 and 1952.

The annual report of the Department of National Health and Welfare for the year ending March 31, 1956, was tabled in the House of Commons by Hon. Paul Martin on January 17.

Dr. Kum-Tatt Lee, who is in charge of the department of chemistry of the food and drug laboratory in Singapore, is spending a year in Ottawa, where he is studying the process developed by C. G. Farmilo, Ph.D., of the Department of National Health and Welfare's food and drug laboratories, to determine the place of origin of samples of opium.

Hospital construction grants recently approved under the National Health Program include: *Newfoundland*, Red Cross Community Hospital, Carbonear, \$26,616; Nursing Station, Jackson's Arm, \$4,283; Nursing Station, LaScie, \$4,283; *New Brunswick*, Hotel Dieu de St. Joseph, Campbellton, \$95,190; *Ontario*, Misericordia Hospital, Haileybury, \$2,778; Guelph General Hospital, nurses' residence, \$73,650; St. Joseph's Hospital, North Bay, \$110,803; McKellar General Hospital, Fort William, \$3,000; Toronto General Hospital, \$846,003; *Saskatchewan*, Lampman Union Hospital, \$1,750; *Quebec*, Hôpital Jean-Talon, Montreal, \$62,883.

Nova Scotia

The Health Planning Committee of the Atlantic Provinces met in Halifax on January 10 and 11. Attending from Newfoundland were Dr. James McGrath, Minister of Health, Dr. T. A. Knowling, Assistant Deputy Minister, and Dr. C. H. Pottle, Director, Division of Mental Health; from Prince Edward Island, Dr. O. H. Curtis, Deputy Minister of Health, and Dr. J. H. Shaw, Chairman, Provincial Health Planning Division; from New Brunswick, Dr. J. A. Melanson, Chief Medical Officer, Dr. C. W. Kelley, Director, Health Planning Services, and Dr. R. R. Prosser, Director, Division of Mental Health; from Nova Scotia, Dr. J. S. Robertson, Deputy Minister of Public Health, Dr. G. G. Simms, Assistant Deputy Minister, and Dr. C. B. Stewart, Consultant. Dr. G. E. Wride and Dr. Charles Roberts, of the Department of National Health and Welfare also attended the conference. The Minister of Public Health for Nova Scotia, the Hon. R. A.

Donahoe, welcomed the delegates and presided at a luncheon given by the Department. Among the subjects discussed by members of the Committee and their advisers were: the Sickness Survey, Laboratory Services, Hospital Infections, Radiological Services, and planning for a hospitalization program. Meetings were held with Dalhousie University and the Maritime School of Social Work to discuss joint inter-provincial projects concerned with post graduate training in nursing, psychiatry, psychology and social work.

Miss Elizabeth Manning, Public Health Nurse with headquarters at Chester, has been transferred to the Provincial Civil Defence staff as Nursing Consultant with headquarters at Halifax.

New Brunswick

Rehabilitation officials and workers in New Brunswick gathered in Fredericton on February 8 for a one-day conference to review the province's rehabilitation program. The delegates were officially welcomed by Dr. J. A. Melanson, Chief Medical Officer. Notable advances have been made in the field of rehabilitation since 1954 when a provincial Co-ordinator of Rehabilitation was appointed to New Brunswick's Department of Health. The conference considered developments for the future and discussed the techniques, processes and problems involved in rehabilitation. Mr. G. W. Crandlemire, Provincial Co-ordinator of Rehabilitation, who planned the conference with the aid of Mr. Noel Meilleur, Assistant National Co-ordinator of Rehabilitation, opened the discussions with a report on Rehabilitation in New Brunswick. Other subjects included a report from Mr. Stan. Cassidy on his proposed Rehabilitation Centre to be built in Fredericton and reports from voluntary organizations. A premiere was held of the National Film Board production entitled "Call It Rehabilitation". The chairman of the evening dinner meeting was the Hon. J. F. McInerney, Minister of Health and Social Services, Mr. Ian Campbell, National Co-ordinator of Rehabilitation, was the guest speaker, and the Hon. Milton F. Gregg, Federal Minister of Labour, was the special guest.

A new Occupational Therapy Department is nearing completion at the Provincial Hospital, Lancaster, and is expected to be in full operation early in 1958. Plans for future extension include a house-keeping department for the training of patients for the management of their own homes or for future employment. The objectives of the Occupational Therapy Department include assisting the future

rehabilitation of the patient in the home as well as improving his mental condition.

Mr. Roy Ferris, B.Sc., has been appointed Assistant Sanitary Engineer. Mr. Ferris is a graduate in engineering of the Imperial College of Science and Technology of the University of London.

Ontario

Miss Isabel Black, assistant director of the Ontario Department of Health's Division of Public Health Nursing, was recently granted a Master of Arts degree at Columbia University. Miss Black is a graduate of Victoria Hospital, London, Ontario, and received her public health nursing certificate from the University of Western Ontario.

A national health grant of \$38,000 has been made to the Department of Health of Ontario to assist in financing a chest X-ray examination for persons receiving old-age assistance, blind and disabled persons' allowances, mothers' allowances and district relief. Approximately 47,000 persons will be eligible for the new service at the outset.

Manitoba

The seventh annual In-Service Training Institute for Sanitary Inspectors, arranged in the University of Manitoba in co-operation with Provincial Department of Health and Public Welfare will be held in Winnipeg, March 4-8, 1957. Mr. M. Flattery, Senior Sanitary Inspector, who has directed the training of sanitary inspectors, Manitoba Department of Health and Public Welfare, will serve as Registrar. The program on *Monday* includes "Glacial Geology in Manitoba," "Infectious Hepatitis" and a symposium on "Frozen Foods Industry"; *Tuesday*, "Community Aspects of Noise", "Essential Equipment in a Sausage Factory", "Bulk Milk on the Farm", "Installation of Prefabricated Septic Tanks" and "Enlisting Public Support for a Health Program"; on *Wednesday*, "Housing", "Brucellosis" and "Visits to University Departments of Interest to Public Health Staff"; on *Thursday*, "Oxidation Ponds and Sewage Lagoons", and "Some Public Health Considerations in Fish Production" and on *Friday*, "Recent Developments in Bottling Plant Equipment", "Comments on the Effects of Recent Legislation Affecting the Sale of Liquor". The closing session will be devoted to a debate "Resolved that the greatest contribution to community health by sanitary inspectors was accomplished prior to 1945".

Saskatchewan

Dr. Leo Kawula has been appointed medical consultant in maternal health in the Child Health Division of the Saskatchewan Department of Public Health. This is a new appointment in the province. Dr. Kawula was born in the Ukraine and practised in Germany following his graduation from medical college and post graduate training in obstetrics and gynecology. He came to Canada in 1949 and after interning in Winnipeg entered the practice of his specialty in Regina in 1953.

A course for operators of municipal water and sewage plants was held by the Division of Sanitation, Saskatchewan Department of Public Health, January 30 to February 8. Attending were 58 municipal employees from Saskatchewan, Alberta and Manitoba. Among the subjects on the course were limnology, microbiology, taste and odor control, iron removal, water and sewage pumps, corrosion, water conditioning, water softening and filtration. Lecturers included personnel of the Division of Sanitation and experts from universities and commercial firms.

Mr. Benjamin H. Haaland has been appointed executive director of the Saskatchewan Hospital Services Plan. He succeeds Mr. G. W. Myers who has accepted a position with the federal government. Mr. Haaland is a graduate in pharmacy from the University of Saskatchewan and served with the Canadian Army overseas. He joined the staff of the Department of Public Health in 1949 as an administrative pharmacist and in 1950 was appointed assistant executive director of the Saskatchewan Hospital Services Plan.

An institute for administrative personnel from hospitals with a rated bed capacity of more than 50 beds was held January 28 and 29 by the Division of Hospital Administration and Standards, Department of Public Health. More than 70 accountants, superintendents and chief executive officers of hospitals attended. The subjects of the panel discussions included—value and objectives of cost analysis, purchasing and supplies control, basis and application of cost analysis, and wage and salary administration.

Dr. Vincent L. Matthews, former medical health officer of the Swift Current Health Region, has been appointed director of the Medical and Hospital Services Branch of the Saskatchewan Department of Public Health. Born in Saskatchewan, Dr. Matthews obtained his medical degree from the University of Toronto in 1945. He received his diploma in public health in 1947

from Toronto, and in 1953 his certification as a specialist in public health from the Royal College of Physicians and Surgeons of Canada.

Alberta

Dr. K. Adler of Ferryland, Newfoundland, a graduate of Trinity College, Dublin, has been appointed Medical Officer of Health to the newly formed Chinook Health Unit at Fort Macleod. Dr. Adler's appointment became effective March 1.

Dr. Hilda E. McNamara, a graduate of the University of Toronto, has been appointed Medical Officer of Health to the Peace River Health Unit in the place of Dr. D. M. Cassidy, who has moved to Fort Vermilion. Dr. McNamara, like her predecessor, served with the Colonial Medical Service in Tanganyika. She recently obtained her Diploma in Public Health at the Royal Institute of Public Health and Hygiene in London, England. Dr. McNamara arrived to take up her new appointment on March 1.

British Columbia

In British Columbia, local health units are responsible to individual Union Boards of Health which consist of representatives from the School Board and Municipal Councils in municipalities covered by the health unit service. The director of the health unit acts as secretary of the Board. For some time, individual Union Boards of Health have desired an annual gathering of representatives of the Boards. Such a meeting was held in 1956 in conjunction with the annual convention of the Union of B.C. Municipalities and an executive committee was appointed to take steps to establish a provincial co-ordinating committee of Union Boards of Health. It is expected that a constitution will be voted on at the forthcoming convention of the Union of B.C. Municipalities.

The success of British Columbia's first hospital-home care program, a joint endeavour of the Vernon Jubilee Hospital and the North Okanagan Health Unit, led to requests from other communities for a similar type of service. Patients are referred to the home care service only upon the approval of the attending physician. It is found that providing housekeeping service, in addition to public health nursing care, is a great help to the patient and the family. In Saanich, patients are referred to the home nursing service by private physicians. This

service is not particularly related to convalescent nursing care of the discharged hospital patients. The municipalities of Courtenay, Comox, Cumberland and Powell River have inaugurated a similar service, while Kelowna has had an effective program of home nursing and housekeeping care for some time.

There were 84 cases of poliomyelitis, and 3 deaths, in British Columbia in 1956, compared with 224 cases and 3 deaths in 1955.

The Division of Laboratories, Vancouver, reports that an unusual strain of *Mycobacterium tuberculosis* was isolated from the axillary gland of a woman who worked in a packing plant as an eviscerator of chickens. The organism was atypical in its cultural characteristics and was identified by the Animal Diseases Research Institute at Hull, Quebec, as an avian strain of *M. tuberculosis* comparable in virulence to standard strains. Human tuberculosis due to authenticated avian strains is extremely rare.

Preliminary figures indicate 106 deaths from tuberculosis during 1956, a rate of 7.8 per 100,000 population, the lowest mortality rate yet recorded in British Columbia. Only 31 deaths were persons under 50 years of age, and only 3 deaths were persons under 20 years of age. In 1954, there was provision for the operation of 925 tuberculosis beds by the Division of Tuberculosis Control; in 1957, the estimated number of beds required will be about 570, a reduction of 39% in three years.

The new Milk Act of 1956 is now in effect in British Columbia, which provides: inspection of dairy farms and approval of such by the Livestock Branch, Department of Agriculture; licensing and inspection of dairy plants by the Dairy Branch, Department of Agriculture; checking of bacterial quality of milk and milk products by milk inspectors (medical health officers and sanitary inspectors); and control of the economic phase of the milk industry by the Milk Board.

Dr. T. H. Patterson has resigned as Director of the Division of Environmental Management, Victoria, to accept the position of Chief, Division of Occupational Health, Department of National Health and Welfare, Ottawa.

Dr. J. L. M. Whitbread, Director of the Upper Fraser Valley Health Unit, Chilliwack, B.C., has been appointed Director, Division of Environmental Management.

